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FOR THE RIDE



44

2016 PERFORMANCE CAR OF THE YEAR

KENTUCKY DERBY

From a field of eight incredible cars, a winner emerges.

BY JACK BARUTH

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THE ANALYSIS

MAN VS. MACHINE

Riding shotgun as Audi's self-driving RS7 goes head-to-head against IndyCar hotshoe

J. R. Hildebrand.

BY A. J. BAIME



THE FORCE OF M



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GO

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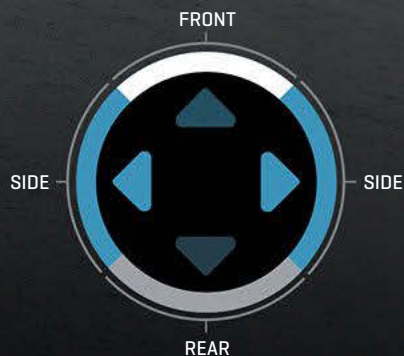


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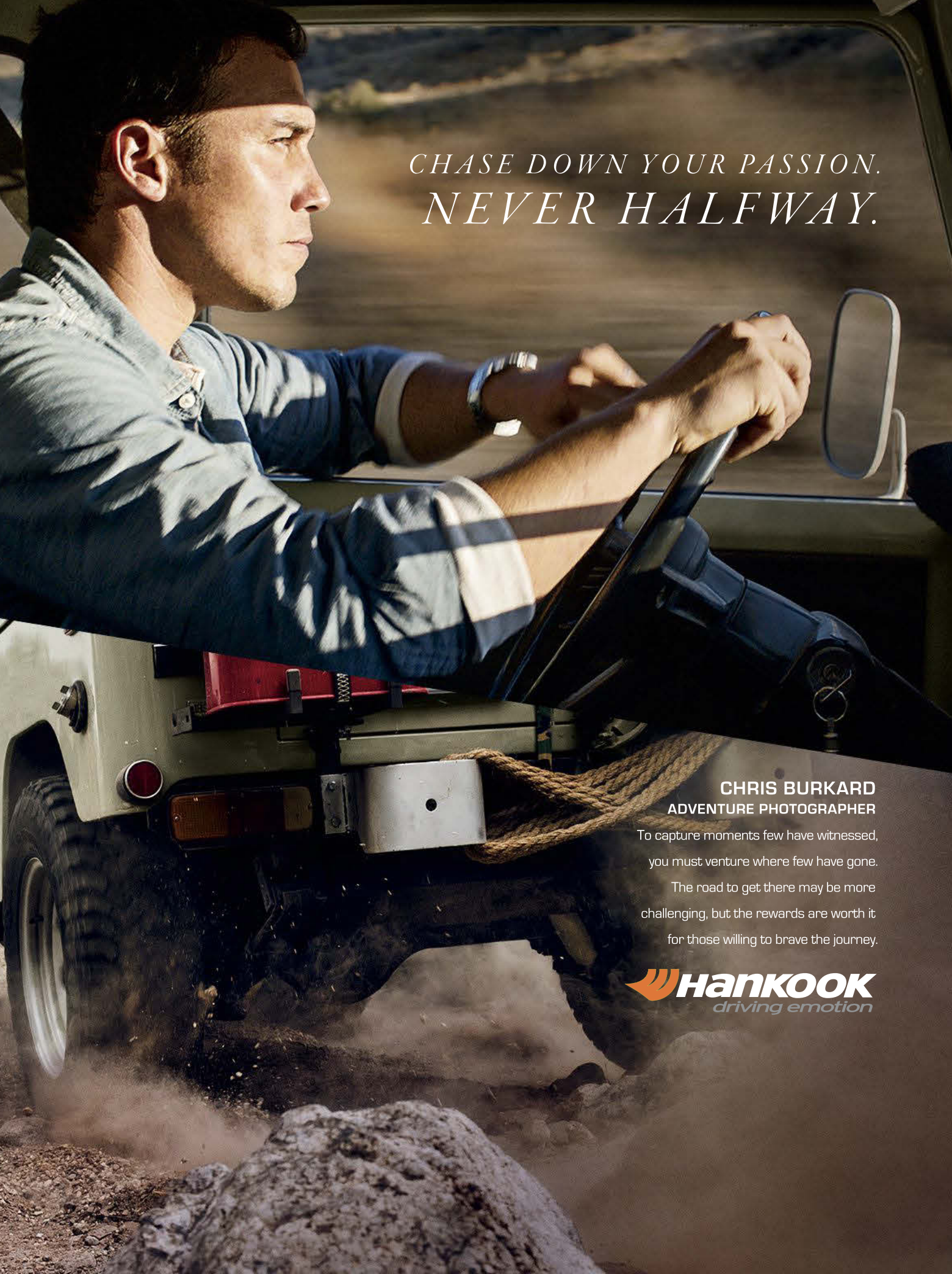
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A man with short dark hair, wearing a blue and white striped long-sleeved shirt, is driving a vehicle through a rocky, dusty landscape. He is looking forward with a focused expression. The vehicle is a light-colored SUV or truck, and the driver's side mirror is visible. The background is a blurred, hilly landscape under a bright sky. The overall tone is adventurous and rugged.

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CHRIS BURKARD
ADVENTURE PHOTOGRAPHER

To capture moments few have witnessed,
you must venture where few have gone.

The road to get there may be more
challenging, but the rewards are worth it
for those willing to brave the journey.

 **Hankook**
driving emotion

GO

CAPTURING THE LIFE AT SPEED

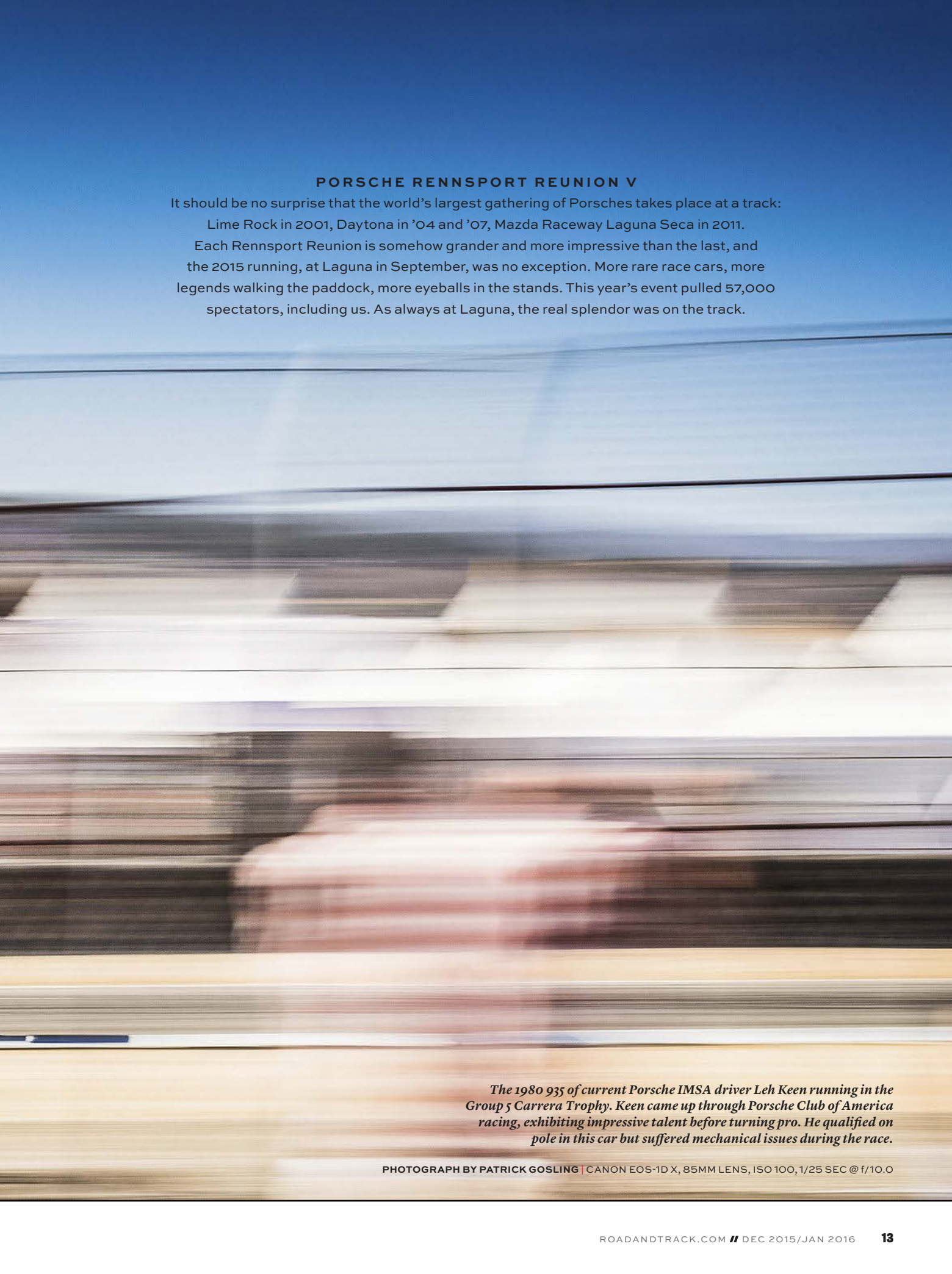


PORSCHE RENNSPORT REUNION V

It should be no surprise that the world's largest gathering of Porsches takes place at a track:

Lime Rock in 2001, Daytona in '04 and '07, Mazda Raceway Laguna Seca in 2011.

Each Rennsport Reunion is somehow grander and more impressive than the last, and the 2015 running, at Laguna in September, was no exception. More rare race cars, more legends walking the paddock, more eyeballs in the stands. This year's event pulled 57,000 spectators, including us. As always at Laguna, the real splendor was on the track.



The 1980 935 of current Porsche IMSA driver Leh Keen running in the Group 5 Carrera Trophy. Keen came up through Porsche Club of America racing, exhibiting impressive talent before turning pro. He qualified on pole in this car but suffered mechanical issues during the race.

PHOTOGRAPH BY PATRICK GOSLING | CANON EOS-1D X, 85MM LENS, ISO 100, 1/25 SEC @ f/10.0



Go

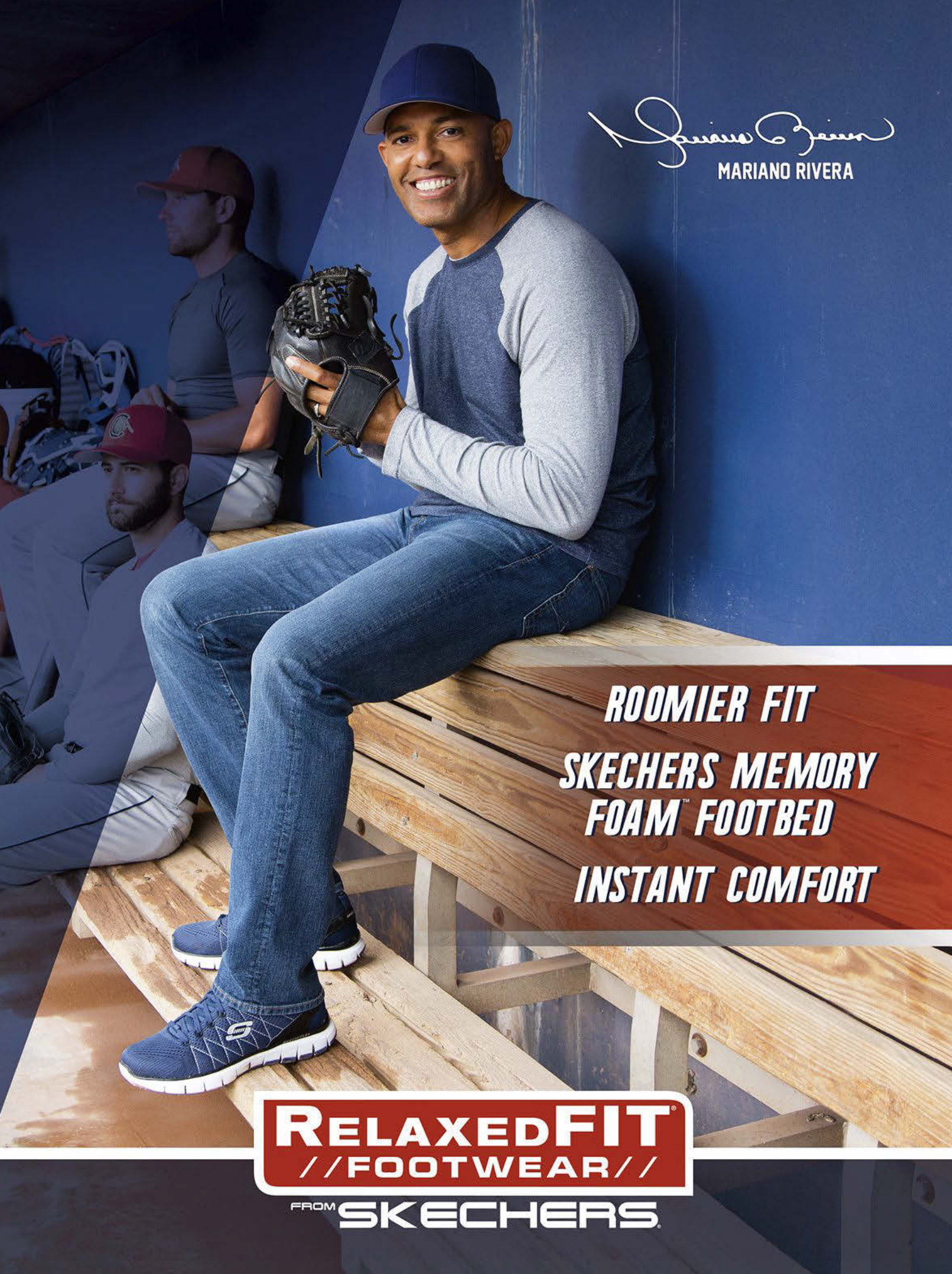
Two turbo 911s: The Le Mans-winning 1976 934 (and former R&T feature car) of Kees Nierop is trailed by the 1979 935 of Stephen Harris. Note the shared tail panel, roof, and . . . not much else.

PHOTOGRAPH BY JOSÉ BORRERO VEGA
CANON EOS-7D, 150-600MM LENS
@ 400MM, ISO 250, 1/1000 SEC @ f/7.1

Matthew Goetzinger's 1965 911 race car admires itself in a driving light.

PHOTOGRAPH BY PATRICK GOSLING
CANON EOS-1D X, 85MM LENS,
ISO 160, 1/100 SEC @ f/2.8



A photograph of Mariano Rivera, a former MLB player, sitting on a wooden bench in a baseball dugout. He is wearing a blue baseball cap, a grey and blue long-sleeved shirt, blue jeans, and blue Skechers sneakers. He is smiling and holding a black baseball glove. In the background, other players are visible, some sitting and some standing, all in a dugout setting with blue walls.

Mariano Rivera
MARIANO RIVERA

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THE ART OF PERFORMANCE

2016 Jaguar XF S vehicle shown. *Class is cars sold by luxury automobile brands and claim is based on total package of warranty, maintenance and other coverage programs. For complete



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BEST IN CLASS COVERAGE



Go

THE IMMORTAL 1959 RSK 718 CENTER STEER

Center-seat RSKs, developed from the famed 550 Spyder, had the unique ability to switch from left-hand to center drive with just a few hours' work. They were the result of Porsche's attempt to tackle both sports-car and Formula 2 racing with a single machine. The model dominated both environments. Just six were built.

PHOTOGRAPH BY PATRICK GOSLING | CANON EOS-1D X, 85MM LENS, ISO 125, 1/80 SEC @ f/10.0





Go

PEAS IN A POD

Le Mans legend Derek Bell, a former Wyer/Gulf 917 driver, strolls past a 1970 917K used in the Steve McQueen film Le Mans.

PHOTOGRAPH BY PATRICK GOSLING | CANON EOS-1D X, 50MM LENS, ISO 125, 1/500 SEC @ f/4.5



I AM THE PACK LEADER

For seven seasons you've counted on Yokohama tires to take you down the racing line, past the checkered flag, and straight to the podium. In return, we've counted on you to give us the ride of our lives. So, to all of the Porsche GT3 Cup Challenge USA by Yokohama drivers and teams: thank you. Thank you for another thrilling season, and we're all geared up to do it again next year!

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THE TALE OF THE ALL-NEW

2016 MALIBU

AS TOLD FROM AN ENGINEERING AND DESIGN PERSPECTIVE.

We sat down with designers Mike Pevovar and Crystal Windham, and integration manager Lance Johnstone to talk about the innovation that went into developing the next-generation Malibu.



Malibu Premier with 2.0L engine offers a GM estimated 32 MPG highway. Official EPA estimates not yet available.





MIKE PEVOVAR & CRYSTAL WINDHAM

GM EXTERIOR AND INTERIOR DESIGN DIRECTORS

In terms of design, what are some defining features of the all-new Malibu?

Mike: The Chevrolet Malibu has a road presence that balances form and function in a way that will turn heads. When creating the “new face of Chevy,” the grille, headlamps and daytime running lamps all laid the foundation for the expressive, windswept body lines. The design is assertive and confident, as emphasized by its solidly planted stance. Long, dramatically sweeping surfaces really make Malibu stand out from the crowd. The whole vehicle feels tidy and taut — something you could throw around a little.

Crystal: Malibu interior design is all about maximizing comfort with style. The instrument panel is down and away for more driver space, but the available touch-screen is up to 8 inches. We offset and slightly floated the screen to use space better. That’s pretty daring for this market, but glare and reach are optimized for a driver. Also, the softest materials are closest to the customers, and the details are outstanding — lots of inserts and accents of different textured leather appointments,

intricate stitching — it’s taking those expressive zones and adding more. We want to surprise people, not just the first time, but the second time, third time — like, “Wow ... they have this little pocket here for my umbrella!” and “Wow ... so this is what my car looks like at night!”

How do interior and exterior design elements of the all-new Malibu complement each other?

Mike: The extra 1.3 inches of rear leg room set the stage for exterior design — it stretched everything, so we used that to set up body proportions to make the vehicle look lower, longer and wider. Also, the sixth rear quarter panel window not only increases visibility and brings more sunlight inside, it helps make the car look lighter, more airy and more spacious from the outside.

Crystal: When you start with a solid exterior foundation with correct proportions, the interior design architecture comes together naturally, and we can focus on improving visibility and comfort. I always say the exterior draws you in, but the interior keeps you there. Drivers spend so much time in their car, so it should feel like a second home.

“We want to surprise people, not just the first time, but the second time, third time...”

Crystal Windham, INTERIOR DESIGN DIRECTOR



LANCE JOHNSTONE

GM VIRTUAL PERFORMANCE INTEGRATION MANAGER

The 2016 Malibu is quieter, offers improved mileage and better handling. How could you improve Malibu on so many dimensions simultaneously?

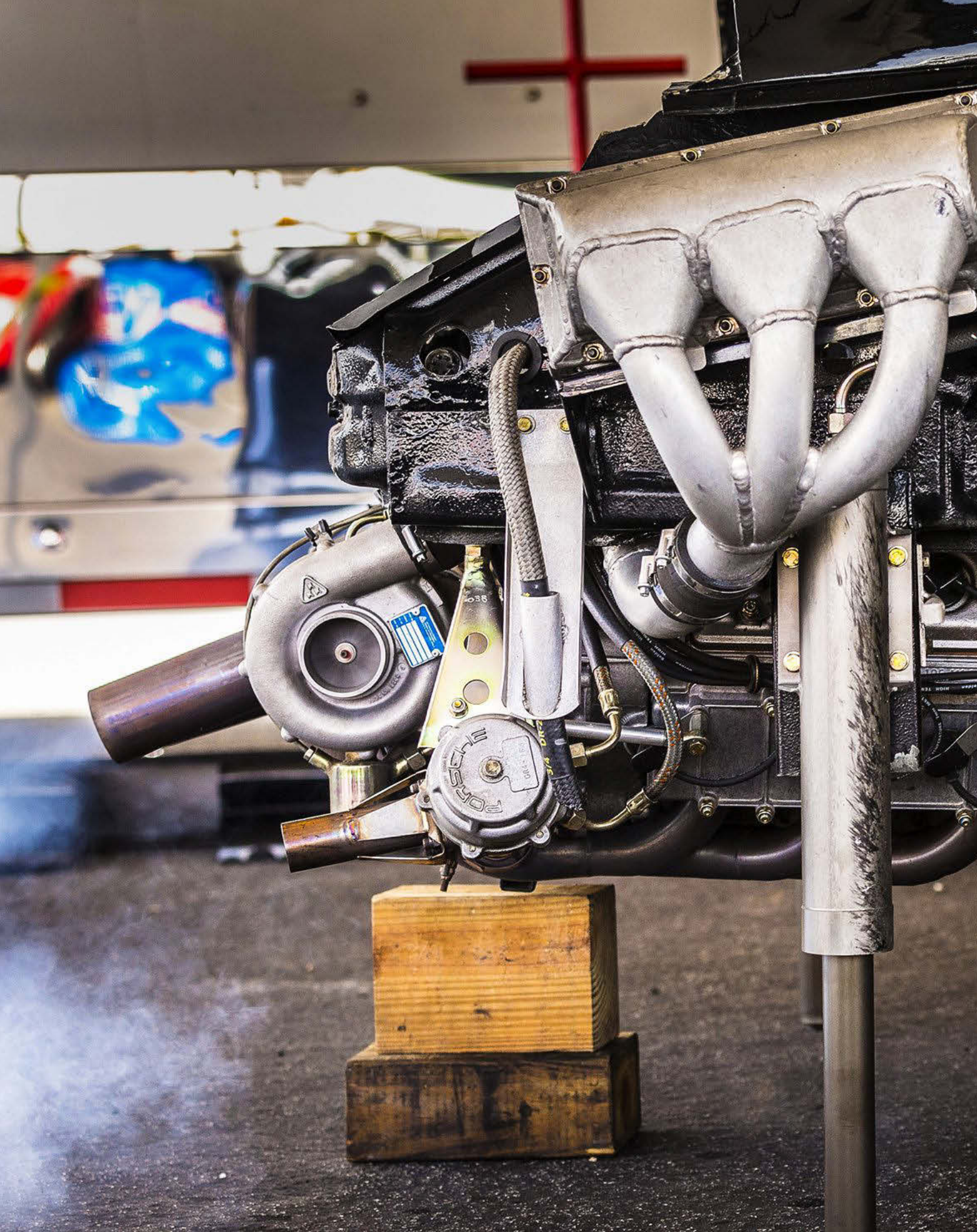
The key is integration — working with all of the vehicle components and vehicle teams simultaneously to create the lightest, best performing structure for the vehicle. The ultimate goal was to design Malibu with surprising MPG with less mass, but no reduction in performance. Integration allowed us to work through all of the consequences of using one part or another, and combining components. It allowed us to optimize more and compromise less, and it really paid off in the all-new Malibu. We were able to remove nearly 300 pounds from the vehicle — making it the lightest vehicle in its class, all the while offering an estimated 37 MPG highway.¹

What technologies aided in optimizing vehicle integration with the Malibu design team?

Computer-assisted engineering has progressed to the point where it allowed us to explore and virtually evaluate more design alternatives for the new Malibu than ever before. This gave us new insights by showing us how these alternative designs for the vehicle structure could improve performance across numerous different vehicle-performance dimensions. These internal structural improvements then paved the way for new external design considerations and possibilities. The engineering improvements optimized performance and mass, enabling MPG and also had an impact on the exterior’s great design.



¹ With 1.5L engine. Based on GM testing. Official EPA estimates not yet available.





Go

SOMEWHERE IN THERE, A TINY SIXTIES SPORTS CAR

A 911-based 935 racer, stripped of its rear bodywork, idles in the pits.

PHOTOGRAPH BY PATRICK GOSLING | CANON EOS-1D X, 70-200MM LENS @ 70MM, ISO 400, 1/125 SEC @ f/4.0





Go

THE IMAGE THAT MADE US GO WEAK IN THE KNEES

The cosmetically unrestored, ex-Pedro Rodríguez 1969 917K owned and driven by Chris MacAllister. It finished second in Rennsport's Weissach Cup, behind another 917K.

PHOTOGRAPH BY PATRICK GOSLING
CANON EOS-1D X, 400MM LENS, ISO 125, 1/320 SEC @ f/4.5



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European Model Shown

THE OLD, THE UGLY, AND EVERYTHING ELSE.

Dear R&T,

I'm too young to get so caught up in nostalgia, but the Shelby Daytona article ["Coupe de Grâce," September]? Phenomenal. Stories like Ken Miles checking gear ratios immediately after driving the car? I don't know where to find gold like that, but you do, and you delivered it straight to my door. And the photos. My goodness, that car is gorgeous. Get that man [Robert Kerian] a beer.

TY FARKAS, SANTA ROSA, CALIFORNIA

The fact that the greatest nonfactory American road-race automobile ever was conceived and built in SoCal by nonfactory engineers with no factory support, tested at that iconic racetrack, and won the '65 FIA championship makes me proud to be an American. Great article, Mr. Smith.

LES LORD
LOVELAND, COLORADO

I was living in England in 1964 and 1965 and I remember the great fuss in the press about the "mostly American" Shelby Daytona Coupe being tested on the motorway at over 180 mph. There was no speed limit at the time, and that may have been a contributing factor in encouraging the Brits to establish one. I can just imagine the car rattling a few windows as it passed near some of the towns north of London.

DENNIS DEBOER
BOUNTIFUL, UTAH



EYE OF THE BEHOLDER

If Jeff Zwart ["10 Most Beautiful Cars"] thinks a Cadillac wagon, an Audi TT, and a Range Rover Evoque are better-looking than any Aston Martin, perhaps he needs to put his crack pipe down for a while!

AL HART
BILLERICA, MASSACHUSETTS

Just wanted to wish you guys good luck with all the letters from angry old men who can't believe any number of vehicles are or are not on the list.

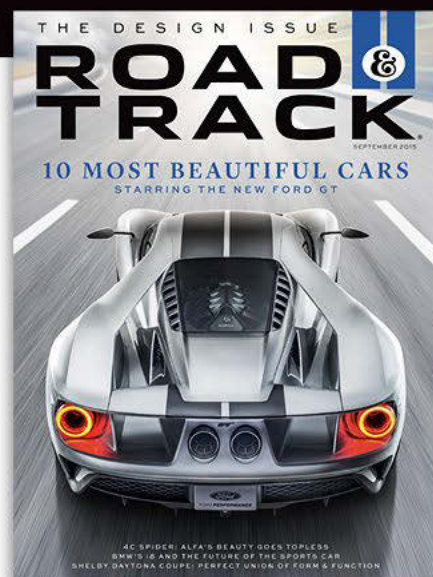
DANIEL FEHLINGS
SAN DIEGO, CALIFORNIA

I realize the previous Range Rovers were slightly less attractive and aerodynamic than a shipping container, but come on, the Evoque? It looks like a Pontiac Aztek that was dropped on its roof after being keyed on the side with a pickax.

JOHN CANNAN
ROCHESTER, NEW YORK

In Zwart's defense, that does sound like an improvement.

Your "10 Most Beautiful Cars" feature shows a number of elegant choices (with the exceptions of the Cadillac CTS-V wagon, which objectively looks like a lacquered shoebox, and the Audi TT, which resembles an upside-down bathtub with wheels). It is a pity that you limited yourselves to more-or-less current vehicles, but since you included



the Ferrari P4/5 Competizione and the Bentley Speed 8, how could you have possibly overlooked the Ferrari 333 SP? It was not only elegant and lithe, but it had an astonishingly long racing career (1994–2003), given how technology renders racing cars obsolete in the blink of an eye.

EVAN BROWNE
OTTAWA, ONTARIO

I had to adjust my bifocals, but does it say "EcoBoost" on the very sinuous backside of the new Ford GT? That bit of lexical flatulence belongs on a supercar almost as much as the profile of Al Gore. What's next? Will the new 911 come with HyperGranola Drive or is BMW planning to pipe in subliminal liberal platitudes along with its fake engine sounds?

SHAWN AMIR
MENLO PARK, CALIFORNIA

Call it a sign of the times. We miss the TwinForce name as much as the next guy, but if EcoBoost was good enough for the Daytona Prototype cars, it's good enough for us.

The BMW i8 ["Tomorrowland"] looks like a 1970s idea of a small spaceship, except for the wheels, which appear to have been inspired by a Veg-o-Matic blade. It is ridiculously overstyled. From the driving report, it obviously has some major flaws as a car, let alone a performance car. It might be fun to



EDITOR'S LETTER BY LARRY WEBSTER

AFTER 500 MILES on our country's most breathtaking roads, and some 250 racetrack laps, the four-day fantasy fest better known as our Performance Car of the Year competition got real. The time had come to pick the winner.

This was tricky, as our nominating process meant that all but the top dogs were left home. We invite cars based on a fairly simple set of guidelines: The PCOTY contenders all produce chart-topping numbers—which by itself is thrilling—but that's simply the price of entry. What's more important to us are the intangibles, the emotional man-machine connection, the visceral character of a superbly crafted automobile, and how a car rises above its spec sheet to offer an unforgettable experience. These days, speed is almost a commodity, so we highlight the cars we lust after, the ones that, if you will, kick us where it hurts.

Invites go out over the summer, and then we wait to see which manufacturers have the courage to enter this subjective contest. Even though Cadillac knew its corporate cousins at Chevy were entering their exotic killer from Bowling Green, the Corvette Z06, Caddy bravely decided to send along an ATS-V. This makes sense; Caddy engineered the car to a high level, and it wanted to not only stand behind its product but also show us—and you—that the car deserves a place at the table, which it surely does.

The Ferrari wormed its way into my soul. Mine, however, was not the only vote.

McLaren and Lamborghini, however, both backed out when they learned the Ferrari 488 GTB would be in the mix. Perhaps that shouldn't have shocked me, but it did. If anything, Ferrari has the most to lose here. Its sporting models like the 488 have long waiting lists for good reason: To enthusiasts, they're crack on four wheels. One would think McLaren and Lamborghini would relish the chance for a head-to-head match. Sadly, they didn't, which tells us all we need to know.

After a few turns in the Ferrari, I started to think they might have been wise to stay away. The 488's 660-hp twin-turbo engine hurtles the car forward like an afterburner, and while I do miss the 9000-rpm howl of the old non-turbo motor, this new one still makes sweet music. The suspension and steering are sublime. I swear I could feel the texture of the road, yet the ride is supple. From the airy cockpit—one of the best outward views in all cardom—there's a sense that the tires conform to the surface, a feeling I haven't had since I sold my Lotus Evora. Now with all the creature comforts one could want, the Ferrari wormed its way into my soul. By day two, I was telling anyone who could stand my blathering that it was the one car I've experienced in my 20-year career that I would drive from now until death.

Mine, however, was not the only vote. After days of driving and passionate lobbying for personal favorites, each voter was given 25 points to distribute among the cars. A driver could award a car a maximum of 10 points, and that could be done only once. The story about the winner and its ascension begins on page 44. ■

Letters CONT.

pretend you're on *Battlestar Galactica*, but then there's the nav screen stuck on the otherwise graceful sweep of the dash. I am not a design Luddite, but compared with the functional beauty and pure form of the 1965 Jaguar E-type on page 94, the BMW "i" cars do not have it.

JASON CUTLER
WILTON, CONNECTICUT

Now you've done it, Webster: "The Daytona Coupe, the prettiest racing car ever." Really? Finned D-type Jaguar? Shark-nose Ferrari? GTO? Porsche 917? Lotus 79? You've opened a can of worms!

DANIEL NEUKOM
SACRAMENTO, CALIFORNIA

HIT THE BRICKS

Several years ago, I was invited to join a pit crew for a vintage event at Road America. I had never had access to the pits before, so it was a treat to be able to stand next to the barrier at the front straight and watch the big cars go by at 150-plus mph. Absolutely amazing. And just a teaser of Smith's experience [Smithology]! You've gotta be at the track—be it round or a road course—to fully appreciate what is happening.

ALAN ARNOLD
JONESBORO, ARKANSAS

Sam Smith's words are a credit to Indy. Indianapolis Motor Speedway has been duplicated other places but there is truly no place like it. Television coverage does not translate the age and essence of the Brickyard. Even today's hopelessly unappealing race cars can't diminish the place, and fans of the sport will find a visit there worthwhile. It does not matter what category of the sport one prefers: The museum is magnificent.

ANDY EVANS
ESCONDIDO, CALIFORNIA

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GAMING COULDN'T CONTAIN HIM. RACING CAN'T KEEP UP.

By winning GT Academy season 1, Bryan Heitkotter went from gamer to amateur driver for Nissan. Now he's leveled up once again – this time on a real track. With his second top-five finish overall in the 2015 Pirelli World Challenge, Bryan and his GT-R[®] NISMO[®] GT3 have broken away from the amateurs to race with the GT pros. For something he's always considered a dream job, this is quite the promotion. The other racers always joked they could never take a gamer seriously. Now when Bryan spies the competition in the rearview mirror, he's the only one laughing.

NissanUSA.com/GTAcademy

Obey all traffic laws, always drive safely and wear your seat belt. Damage resulting from racing, competitive driving, track and/or airstrip use not covered by warranty. See your New Vehicle Limited Warranty and Owner's Manual for proper vehicle operation and complete warranty details. ©2015 Nissan North America, Inc.

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Urge Overkill

MEET THE OLD PORKERS, WANT THE OLD PORKERS.

SMITHOLOGY BY SAM SMITH

WE TALK A LOT ABOUT PORSCHEs around here, but there's a reason. Many, actually. Feeling. Also redemption, speed, underdogs, arrogance, comeuppance. And that most human of traits, fallibility. There are excellent Porsches and stinging disappointments, bits of genius and machines that sully dealer lots like flaming sacks of dog doo. Not all of the former are old, and not all of the latter are new.

Then, every few years, we get a Rennsport Reunion. And everything bubbles to the surface.

There have been five Rennsports. Each has been billed as the world's largest gathering of Porsches. I've been to three, including the most recent, at Mazda Raceway Laguna Seca last September. Like its predecessors, Rennsport '15 was equal parts vintage race and cult church. Also a remarkably efficient way to make your brain fall down your spine and leak out your shoes.

History shows up. Le Mans winners, unobtainium prototypes, rare birds not seen publicly in decades. Laguna hosted 57,531 spectators, 320 cars on track, and 1400 spectator Porsches. The machinery ranged from expert-stumping obscurity to predictable crowd-pleaser. (Example: Four Gulf 917Ks, including an unrestored Wyer car and the machine that Steve McQueen drove while filming *Le Mans*. For reference, four flat-fan twelves sparking up at once will liquefy your knees.)

And the people. I knew what was coming but still marveled. Around 50 "name" drivers walked the paddock, plus a posse of racing chiefs, from Norbert Singer to the recently retired Hartmut Kristin. With Singer alone, you've got 16 of Porsche's 17 Le Mans wins and enough maniacal rule bending to give a Frenchman palpitations. He looks like a high-school math teacher and was mobbed in crowds.

Not to mention the smaller glories. You know what happens when you're two feet away from an idling RS Spyder (Le Mans class winner, 2008–2009)? That V-8, dense and buzzy, literally cavitates your lungs. Imagine the world's fastest drumroll, applied directly to your nipples. At one point, three of the things slipped past me in the paddock, bark-droning toward the false grid. If that kind of bodily vibration occurred at home, you'd call an ambulance.

Like a lot of people, I once thought it was all hype. I was almost certainly an idiot. The first 911 I tried, a 930, came while working as a mechanic after college. It was tired, slow, weird. Factory parts were absurdly priced. Later, while instructing at a Porsche Club track day, I drove a 996-chassis Carrera 4S. It felt fat and distant. I didn't get it.

That was the wrong foot. When I began writing about cars,

redemption came in a flood. The 997 GT3 I wanted to bronze and put on a shelf. A 934, a 962C. The transcendent 1980s 911 Clubsport I'll remember until I croak—lift, chuck the wheel, dance to the sound of the Mulsanne. A magic tautness combined with steeped tradition. Everything I'd read about for years.

This is how you build a brand: devotion and stubbornness, maybe a little too much of each for a little too long.

Rennsport was also a reminder that we don't all process affection in the same way. Take Patrick Long, 34, Porsche's first full-time American factory driver. He owns a few old 911s, and he co-founded an air-cooled-Porsche gathering called Luftgekühlt. At Rennsport, he raced three cars. Then there's Australian Mark Webber, 39, the ex-F1 star who drove a 919 at Le Mans. He raced



An idling RS Spyder: Imagine the world's fastest drumroll, applied directly to your nipples.

nothing at Laguna, by choice. Said it didn't help him appreciate the cars. Some guys want to swim in old drama, have it reach down their trousers and rummage around. Others are content to simply be in the same room.

And that room grows ever larger. Judged solely by volume, Porsche is now an SUV and sedan company that happens to build sports cars. In spite of this, or perhaps because of it, people still want a piece of the myth. That arm's-length German approach to emotion. (Driving 911s, I always think of that YouTube clip where Werner Herzog narrates the children's book *Mike Mulligan and His Steam Shovel*: "His affection for ze masheen vas out of proportion vith social norms.")

How the cars make you feel like you're in on a secret.

Not that you are, of course. The ever-rising sales of new Porsches are countered by the ballooning values of old ones. Don't price 993 Turbos without a strong stomach. Even the black-sheep 914 is now being chased as an investment.

Each time a Rennsport ends, someone at Porsche tells a journalist "never again." The logistics are too difficult, they say. The old drivers are getting older; the cars have become almost too valuable to exercise. But part of the event's glow is its uneven timing, how it always seems like a one-off. Like how you drive a new Cayman GT4 and immediately raid the couch for funds, because *what if it's never this good again?*

But there will be more Rennsports. The marketing value is too great, the brand's past too crucial to its success. And the number of people who live and breathe the cars is too large.

Which hints at a truth. Yes, the SUVs share parts with VWs. The purists rail because every new 911 is less like the old. But ultimately, the customer base grows because the cars still do something right. How that changes—and why—will fascinate historians for years. Also me.

I shouldn't have to tell you why I want to go back, but I will anyway. I dream of sitting under a tree in Laguna's Corkscrew for a few more minutes, the Monterey hills unfolding in the distance. Of watching a family's legacy rip by, one car at a time, like an ear-frying flip book.

Because there's a reason for it all. A humanity. A story.

Not that I'd complain if it rummaged around my trousers. ■

Sam Smith is an editor at large for R&T. He does not own a Porsche 911. Yet.

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The Last Safety Frontier

DRIVER DEATHS CALL FOR CLOSING THE OPEN COCKPIT.

PADDOCK PUNDIT BY MARSHALL PRUETT

DEATH HAS ALWAYS BEEN—and will always be—a part of motor racing. Its first personal visit came at age 19 on my first day as a professional race-car mechanic; former America's Cup skipper Tom Blackaller pulled away from the pits, made it halfway through the lap, and died of a massive coronary after exiting Sears Point's carousel. My ignominious debut was followed by more surreal chapters—scrubbing pools of dried blood left behind by shattered bones in an Indy-car chassis and hearing engines fall silent while injured drivers are enveloped by safety workers.

When Justin Wilson died after being struck by debris at Pocono Raceway in August, the predictable hail of anguish and sorrow followed: Another friend buried, more questions of whether it could have been prevented. And there's something new to ponder.

Our sport works from a belief—often a little lie we tell ourselves—that something positive will come from each sacrifice. Fire-related deaths brought flame-resistant overalls. Broken wheels and chassis components that once rained from above after a crash were kept earthbound with safety tethers. Mounting numbers of basilar skull fractures inspired the HANS device. It's a coping mechanism that fills the time it takes to develop whatever crash-inspired safety innovations are required.

But Wilson, a 37-year-old husband and father of two, died for a reason that's all too familiar: He was strapped into an open-cockpit Indy car and got hit in the head. Before Wilson, it was F1 driver Jules Bianchi whose exposed helmet met a mobile crane. Two-time Indy 500 winner Dan Wheldon crashed and was killed by a pole that caved in the side of his helmet. Wind the clock back to 1994, and it was Ayrton Senna dying in a crash where a piece of suspension pierced his brain.

As with Wilson, Bianchi, and Wheldon, Senna's injuries were limited to the one portion of his body that was prone to direct contact. In a sport driven by pushing boundaries, the expected response to their head traumas would be to innovate and overcome, yet the ongoing need to protect drivers with some form of canopy or shield is willfully ignored. Untold millions are continually poured into developing the next performance gizmo, but two decades on from Senna's death, open-wheel sits idling.

"It's asinine to think with all the advancements we've made in this sport, we keep having drivers die from getting hit in the head," says F1 and Indy-car designer Gordon Kimball, whose son Charlie races for Chip Ganassi's IndyCar team. "Where's

the sense of urgency to try and stop it from happening again?"

As legendary racing-car designer/driver Dan Gurney has found, death can be a costly form of inspiration.

"I'm not saying you have to have accidents to find better ways to do things, but I think you'll find that is what usually takes place. It's a case of looking for the solution after the fact."

So if death is the prompt to act, why is open-wheel plagued by inaction on this issue? It's likely rooted in another lie. Thanks to all the safety improvements born from past tragedies, the frequency of deaths in F1 and IndyCar has been on a steady decline. Somewhere in those impressive statistics, the century-old need to keep pushing has been lost. Progress has stalled. However, newfound pressure from an unexpected source could finally force F1 and IndyCar to respond.



The ongoing need to protect drivers with some form of canopy or shield is willfully ignored.

Bianchi's and Wilson's deaths inspired an outpouring of concern and support on social media for open-wheel driver safety and indicated that today's fan base is less willing to accept death as an occupational hazard.

"Can we kill a driver every couple of years this way?" Kimball asks. "I don't think so. If you look at the direction society is moving, people don't accept it the way they once did." If the cure for racing's safety malaise is eventually credited to Twitter and Facebook, so be it. ■

Former race engineer Marshall Pruett regularly ponders life—and death—in the paddock for R&T.

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The One:1's only connection to the ground is through the tires. Through the tires come all forces, feedback and emotions.



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2016 PERFORMANCE CAR OF THE YEAR

KENTUCKY DERBY

**EIGHT THOROUGHBREDS BROUGHT AN AVERAGE OF 551 HORSEPOWER
TO OUR ANNUAL COMPETITION. WHICH ONE DONS THE WINNER'S WREATH?**



BY JACK BARUTH | PHOTOGRAPHY BY DEAN SMITH, MATT TIERNEY & ANDREW TRAHAN



THE OLD BLACK FIREBIRD was blocking our exit from the gas station. As the passenger door opened, I saw the look on the face of the immense, camouflage-clad good ol' boy who sprang out like he'd just spotted a new form of game on his personal hunting grounds. Throwing the Cadillac ATS-V coupe into neutral, I jumped out to greet the man before he reached our group. I spotted a sun-worn but freshly polished badge on the Pontiac's front fender. No way. Could it be?

"Eighty-eight GTA, am I right?"

The driver, also wearing full hunting camo but half the size of his friend, laughed behind his wraparound sunglasses.

"Yeah! Been working on her for a while. Lot of specific parts to this model, you know? Everything from steering wheel to spoiler. Hard to get. What you boys doing down here? Some kind of test? That's the new Ferrari, right?"

"488 GTB," the hulking passenger clarified.

"Which makes this," and I paused for effect, "GTA meets GTB." In the space of the next few minutes, everybody shook hands and swapped stories and linked up on Instagram. Our new friends offered us some advice for finding a good meal and avoiding the local speed traps. They seemed to know almost as

much as we did about our eight contenders, from the sleek Mercedes-AMG GT S to the flamboyant Shelby GT350R, although they readily admitted that our outrageous-looking Continental GT3-R was the first Bentley they'd ever seen in the metal. They also offered us some words of caution.

"Man, some of these roads are pretty tight, even for a car with this much power," the driver suggested, pointing at the GTA's hood and the 225-hp V-8 beneath it. "And these cars got . . . twice as much power?"

"In some cases, almost three times as much," I replied, dropping into the deep Competition Sport bucket seat of the 650-hp Z06. The look I received in return contained both envy and pity. Sentiments I wouldn't understand in their entirety until later, after I'd spent two full days hammering up and down these rural roads like a caffeine-powered cruise missile, my eyeballs shaking in their sockets and my hands sore from a hundred midcorner corrections, my internal accelerometer recalibrated to something between roller coaster and F-15 Strike Eagle.

"Y'all be careful, now," the man with the Firebird said, as I fired up the supercharged Vette and started backing out of my parking spot. "Y'all be careful."



THE CONTENDERS

WELCOME BACK, MY FRIENDS, to Performance Car of the Year, commonly abbreviated to PCOTY and pronounced to rhyme with “free-floaty.” This year, the first two days of testing will see our eight contenders cover 500 miles of lightly inhabited two-lanes, from Berea, Kentucky, through the Daniel Boone National Forest, and down to Cookeville, Tennessee. From there, we’ll take the longest way possible to NCM (National Corvette Museum) Motorsports Park, next to the famous Corvette plant in Bowling Green, Kentucky.

At the track, editor-in-chief Larry Webster will set lap times on a configuration that joins NCM West and East circuits into a loop of just under three miles. This favors cars with

some irrational exuberance in the boiler room, which is good, because nearly every member of this year’s lineup can spin the needle off a chassis dyno.

For the previous two years of PCOTY, we invited cars that connected with the driver on both road and track, cars that engendered a visceral, emotional reaction in the man or woman holding the steering wheel. That hasn’t changed for this third go-round, but now we’re insisting that our entrants live at the very top of the street-car performance pyramid. In this league, a competitive lap time is mandatory. You can get there with biplane wings and massive splitters—hello, Viper ACR. Or you can do it with finesse—nice to see you, Porsche Cayman GT4. We don’t care how you get there, but get there if you can. Or we’ll leave you behind.



2015 BENTLEY
CONTINENTAL GT3-R

2016 CADILLAC
ATS-V COUPE

2016 CHEVROLET
CORVETTE Z06

2016 DODGE VIPER ACR

PRICE, BASE	\$341,025	\$63,660	\$80,395	\$122,490
PRICE, AS TESTED	\$341,025	\$74,360	\$98,360	\$149,290
LAYOUT	front-engine, AWD	front-engine, RWD	front-engine, RWD	front-engine, RWD
ENGINE	4.0-liter twin-turbo V-8	3.6-liter twin-turbo V-6	6.2-liter supercharged V-8	8.4-liter V-10
POWER	572 hp	464 hp	650 hp	645 hp
TORQUE	518 lb-ft	445 lb-ft	650 lb-ft	600 lb-ft
TRANSMISSION	8-speed automatic	6-speed manual	7-speed manual	6-speed manual
WEIGHT	4928 lb	3781 lb	3536 lb	3420 lb
L x W x H (IN)	189.2 x 76.5 x 55.3	184.7 x 72.5 x 54.5	177.9 x 77.4 x 48.6	175.7 x 76.4 x 49.1
0-60 MPH	3.3 sec	4.3 sec	3.3 sec	3.5 sec
0-1/4-MILE	11.6 sec @ 120.1 mph	12.6 sec @ 114.7 mph	11.5 sec @ 124.8 mph	11.6 sec @ 125.7 mph
PCOTY PEDIGREE	First modern Continental the Bentley Boys would like.	The ATS-V aims directly at the M3 and makes a serious dent.	The most capable Corvette ever.	The ACR has a license plate and 1700 pounds of downforce.



2016 FERRARI 488 GTB



**2016 FORD MUSTANG
SHELBY GT350R**



2016 MERCEDES-AMG GT S



**2016 PORSCHE
CAYMAN GT4**

\$245,400	\$63,495	\$130,825	\$85,595	PRICE, BASE
\$347,942	\$67,465	\$156,150	\$104,815	PRICE, AS TESTED
mid-engine, RWD	front-engine, RWD	front-engine, RWD	mid-engine, RWD	LAYOUT
3.9-liter twin-turbo V-8	5.2-liter V-8	4.0-liter twin-turbo V-8	3.8-liter H-6	ENGINE
660 hp	526 hp	503 hp	385 hp	POWER
561 lb-ft	429 lb-ft	479 lb-ft	309 lb-ft	TORQUE
7-speed dual-clutch automatic	6-speed manual	7-speed dual-clutch automatic	6-speed manual	TRANSMISSION
3300 lb (est)	3708 lb	3683 lb	3052 lb	WEIGHT
179.8 x 76.9 x 47.8	189.7 x 75.9 x 53.6	179.0 x 76.3 x 50.7	174.7 x 71.5 x 49.9	L x W x H (IN)
3.0 sec (est)	4.0 sec	3.2 sec	4.0 sec	0-60 MPH
10.9 sec @ 128.0 mph (est)	12.3 sec @ 117.9 mph	11.3 sec @ 125.1 mph	12.3 sec @ 115.9 mph	0-1/4-MILE
<i>Ferrari adds turbochargers to its iconic mid-engine supercar.</i>	<i>Flat-plane crank, Sport Cup 2 tires, a Mustang turned up to 11.</i>	<i>The GT S is the SLS successor pointed squarely at the 911.</i>	<i>Light and lithe with real 911 horsepower and presence.</i>	PCOTY PEDIGREE

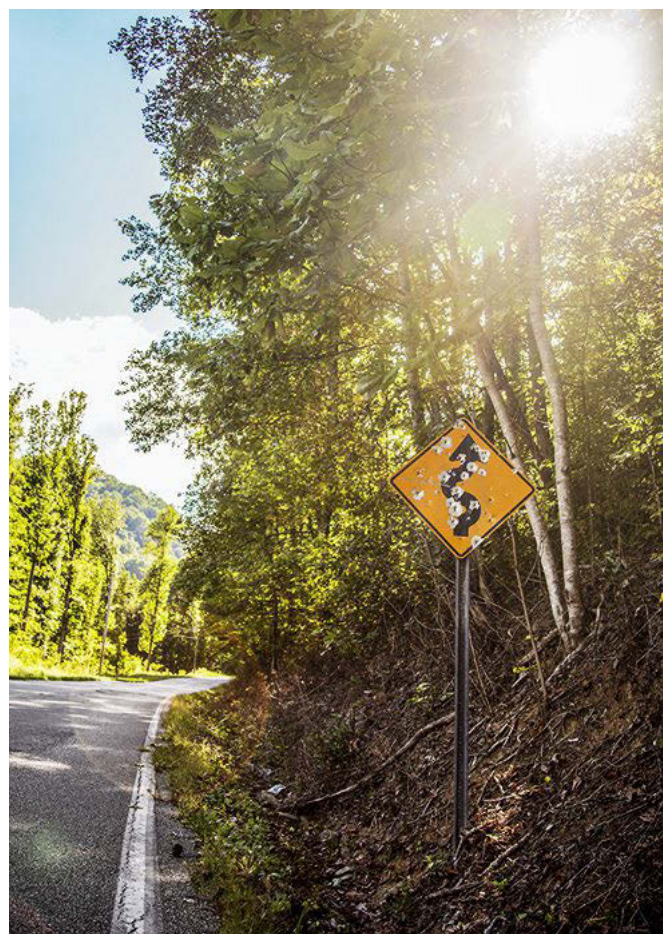


THE ROAD

IT'S **SUNRISE OF DAY ONE**, cold enough for the heaters to be on in all the cars and for the road to skitter a bit beneath summer-spec tires. After a short drivers' meeting, we head for the proverbial hills. I've decided to look after myself by snagging the Bentley to start the morning. It's the only all-wheel-drive car in the test, feeding 572 hp and 518 lb-ft of torque (592 hp, 553 lb-ft on overboost) through a not-so-old-school eight-speed torque-converter automatic in a manner reminiscent of an aircraft-carrier catapult. Can it turn like the Cayman GT4? Of course not—but to make pace on unknown roads, nothing quite satisfies like straight-line power.

Observe: Contributor Chris Chilton, the other English import in this test, is ahead of me in the Z06, attempting to deal with the Corvette's considerable width, the unfamiliar-to-him left-hand steering, and the treacherous tarmac all at once. He has no answer for the Bentley's superb traction at corner exit. I'm reeling him in like a fish out of every turn, one finger on the wheel, mostly focusing on the lovely sound system. I'm listening to *Seasons*, recorded by my friend Anthony Wilson and three other classical guitarists at the Met in 2011. And through the noise-killing double-glazed glass, I'm watching a silent movie

When it leaves terra firma, the Ferrari issues a gentle beeping noise to alert the driver, in case heart-in-throat doesn't do it.





titled *Skilled Driver Working Hard in Supercharged Corvette*. Nice combination. Very posh.

Later in the day, web editor Travis Okulski will come to the same conclusion about the pace and audio fidelity: "I feel like I'm driving an issue of *The Absolute Sound*." But he complains about the extraneous pops and crackles from the exhaust. The thing to do is take the massive alloy shifter out of Sport mode, which makes the car quieter but no slower.

Indeed, it's hard to imagine going any faster on a public road. I have some concerns about the brakes, which get a little soft over the course of the day, but I can't easily contain my excitement for the GT3-R. Contributing editor Richard Pinto isn't a fan: "Every degree of steering results in a slight squeal from the front tires." Well, the car does weigh 5000 pounds, you know. But the light steering is trustworthy, and although it's impossible to escape the Bentley's inertia, there is always time to fix whatever problems one might encounter through an excess of gentlemanly enthusiasm.

It's depressing to close the Continental's power-assisted carbon-fiber door for the last time and hop over to the Cadillac ATS-V. The little silver coupe has many of the things we love

Cayman GT4 streaks, we swoon. Mid-engine Porsche is made for Kentucky and Tennessee two-lanes. Caddy chassis is impeccable.

about a car: close-coupled cockpit, manual transmission, good forward sightlines. The twin-turbo V-6, on the other hand, makes no

friends among the staff despite a generous 464-hp output. "The ATS-V is more like a really well-sorted BMW 435i rival than an M4 competitor," Chilton sniffs. "I kept looking for the sickly goat that I was sure was trapped under the hood, but all I could find was an engine," says contributor Colin Comer.

Driven in isolation, the ATS-V would feel like a powerful and refined sporting coupe, but the front end is almost overeager to bite. "I can drive the piss out of this car," Webster notes, no doubt because it feels suspiciously like it's been aligned to SCCA Showroom Stock specifications. The interior is a cost-cutting mishmash to some of us, but there's little to criticize about the sleek and well-proportioned body. "If only it had the old CTS-V coupe's engine," Bowman sighs, and everybody nods. That supercharged V-8 never failed to show up for work on time.

Neither does the Corvette Z06's LT4, and it won't let you forget it. From the deep front splitter to the oddly morose expression produced by the wide-body rear end, the bumblebee-colored Vette positively exudes menace. And the V-8 can cash every check the visual package writes, with funds to spare. Webster loves the thing so much he borrows the language of pyrotechnics: "Explosive...lighting a fuse...stellar engine...so much firepower on tap."

Maybe too much firepower. On these old moonshiners' roads, with their off-camber switchbacks and occasional stomach-dropping plunges followed by blind 90-degree turns, I'd rather



be in a base Corvette Stingray, a sentiment echoed by Okulski ("It does 90 in second gear. Why?") and editor-at-large Sam Smith ("The extra power feels like a hindrance.") The astounding speeds possible down even the briefest straights combine with strong steering assist to give the impression of low front grip. Chilton advises that if I can just get used to the light wheel, I'll trust the front tires. That never quite happens for me. I'm always a bit nervous. It's just not as happy on the road as its naturally aspirated sibling.

And that's okay. Think of the Z06, particularly in the all-out Z07 Ultimate Performance Package trim driven here, as the fan-service Vette. From the black trim to the transparent panel in the Gurney flap to the omnipresent smell of hot resin, it's the most Corvette-ish Corvette you can buy from your local Corvette store. That's why it exists. Period, point-blank.

Out of the Z06 and into the Viper ACR. Its massive track-only front splitter extension, part of the Extreme Aero package, has been removed for our drive to Tennessee, and the Bilsteins have been set to their most road-friendly positions, but there's no disguising that the word "road," in the context of this massive coupe, should always be followed immediately by "course."

There's no disguising that the word "road," in the context of the Viper, should always be followed immediately by "course."

You just have to resign yourself to frequent jarring impacts. The stereo, derided by Smith as "AM-radio quality," would best be put to work playing a loop of some Yeageresque pilot reassuring you about turbulence. With benefit of hindsight, the Z06 was a luxury car, a veritable Corvette Fleetwood Brougham compared with this.

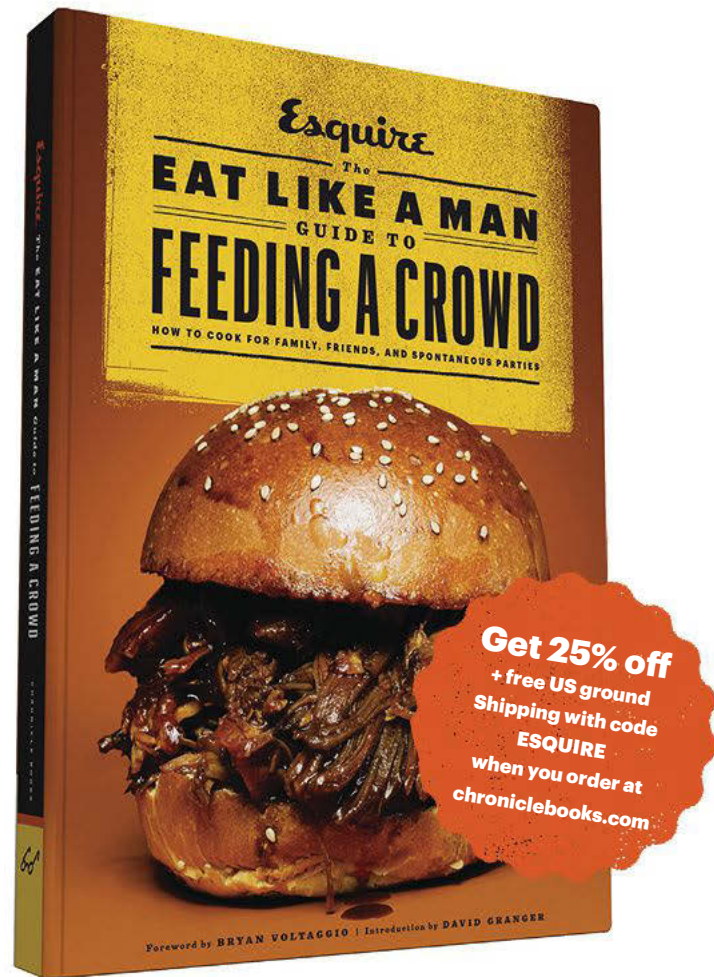
Deputy editor Joe DeMatio, visibly apprehensive before stepping into the composite chrysalis of the Viper, emerges a beautiful butterfly of a fan: "Quite the roller-coaster ride. Second or third gear, 4000 to 6000 rpm, was my sweet spot. I only wished for a proper dead pedal. What's there feels like a bolt in the floor." His enthusiasm is lasting; the next day he tells us, "I let some distance open up between me and the rest of the pack. No traffic, and I had the hill climb to myself. Wow. The sound, the grip, the way I was able to devour that section of road. That will stay with me."

Webster disagrees, sharply: "This is an overcooked car, overdone." True, on the road, you'd rather not have nearly a ton of aerodynamic downforce. Comer, who has a business buying and selling classic vehicles and is no stranger to owning cars that draw a crowd, has doubts: "I think I am just way too old to drive a car with a wing *that big* on the road without looking



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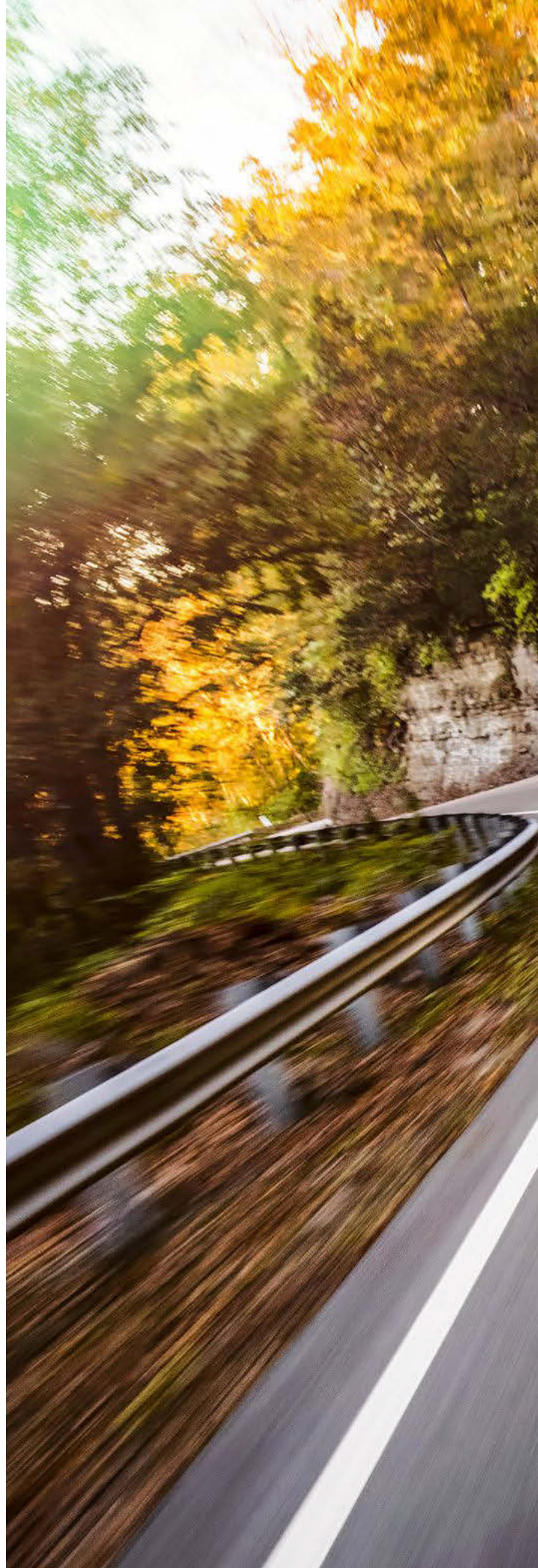
like a fool. . . . It is about twice as big as the wing on my current GT-1/Trans-Am car.” Well, Mr. Comer, that’s because the SCCA has rules about your Trans-Am racer. Driving a Viper, like riding an open-piped Harley Shovelhead, is to place one’s self outside the influence of anything so stifling as “rules.”

Operating the ACR stirs the Walt Whitman within my soul: If I worship any particular thing, it shall be some of the might of the Viper. / Massive biplane wing, it shall be you. / Delivery-truck growl, side pipes hot as the fires of Sheol, it shall be you! / Removable fender vents, fragile as porcelain and attached by insubstantial bolts, it shall be you!

Stirred by love for all things bright and Viperful, I ask the girl behind the counter at Subway, who looks remarkably like a young Nastassja Kinski, to come outside and just look at the ACR with me, possibly for the afternoon. She declines immediately, but then she inquires about the Ferrari parked next to it.

Ah, the Ferrari. “This is my forever car, right here,” Webster declares as he steps out to hand me the keys, and who can blame him? It’s the most powerful of our eight entrants, yet it behaves like a Honda Civic in low-speed urban driving. It’s the only car here with proper sports-car proportions, low and small and tidy, yet the cockpit easily takes two six-foot-three occupants with helmets. One switch summons a thrilling wail, while another awakens a stereo with peerless Bluetooth integration.

**Tennessee curves:
Ferrari and Corvette
outside Cookeville;
GT350R alone and happy.**





So you do what I do, which is use that Bluetooth to call every one of your friends, get their voice-mail notifications, then leave them two-minute messages of the 3.9-liter, dry-sump V-8 screaming to the 8000-rpm redline over and over again, announced each time by a series of red LEDs built into the carbon-fiber-covered steering wheel. Tug the right-side paddle, and the dual-clutch seven-speed transmission seamlessly starts the process over again.

"It's a proper hooligan if you want it to be, and more indulgent of silliness than any of the other cars here," an enthralled Chilton says. Truly, the pace of the 488 GTB is not to be understood by mere mortals. It is too fast for any road in existence. So, too,

The pace of the 488 GTB is not to be understood by mere mortals. It is too fast for any road in existence.

tang is very much the track variant, squatting on suspiciously sticky rubber and what looks like three degrees of negative front camber. After the frenzied Ferrari, I'm hoping to catch my breath, to relax a bit behind the family-sedan-sized wheel of a nice, friendly big grand tourer. The clutch is comically light, like it's sourced from a Fiesta. That's good. But from the moment I start the engine . . .

was its 458 Speciale predecessor, but that car made you work a bit. With the turbo-charged 488, effort is replaced by joy in a sort of lost-wax casting process occurring within one's soul.

After lunch, it's a Le Mans start from the restaurant booth, so I do the natural thing and run to the Ford. This Mus-

tang is very much the track variant, squatting on suspiciously sticky rubber and what looks like three degrees of negative front camber. After the frenzied Ferrari, I'm hoping to catch my breath, to relax a bit behind the family-sedan-sized wheel of a nice, friendly big grand tourer. The clutch is comically light, like it's sourced from a Fiesta. That's good. But from the moment I start the engine . . .

Let me explain. The only way the team at Ford Performance could get 526 hp from 5.2 liters—the fabled 100 hp per liter and then some—was to reengineer the whole thing into a bit of an insane race motor. Flat-plane crankshaft. So I open the throttle, following Webster in his beloved Ferrari up a series of sharp hillside hairpins that seem designed to test second-gear acceleration and broken-asphalt traction at the same time, and the moment the tach hits about five grand, I hear The Sound.

I firmly believe that when human civilization finally collapses and our descendants are nothing but hipster-bearded cavemen on a quest for fire, stories of The Sound will still be told every night, to frighten children and preserve all that is worth preserving of Western civilization. From generation to generation. "What an engine! What a noise!" says Chilton, in much the same way that human beings will ten, twenty, fifty thousand years from now.

They say that the government has special machines that can emit certain frequencies and make you throw up. I tell you that the Mustang emits certain frequencies that improve your humanity, that force you into a sympathetic resonance, your heart swelling as the needle twists to the final destination. Ahead of me, Webster is unable to pull away. It's Ford versus Ferrari all over again. ("I wasn't trying," he will later say, somewhat petulantly.) The Sound lashes me in waves from beneath the oddly shaped hood, all sperm-whale blunt-faced menace, and I'm reminded of Stubb, the second mate on the *Pequod*:

Ferrari V-8 under glass never grows old, especially one making 660 hp.





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*The AMG is very fast, very easy to drive, brilliant interior.
The whole thing feels like it's milled from a single billet of high-quality aluminum.*

"Hurrah! This whale carries the everlasting mail!"

At a lonely Dairy Queen somewhere on the desolate flat plain between two cold mountains in Tennessee, Smith, Okulski, and I take turns enthusing about the GT350R. Bowman calls it "the Mustang that all Mustangs have been waiting to become." But DeMatio and Webster have equally kind words

for the Cayman GT4. I'd better check it out. "Jump into the car and it immediately just feels right," DeMatio offers. "The seat, the shifter, the steering wheel—all made for drivers." I have to agree. The fixed buckets combine with the high but linear control efforts to inspire confidence, and I'm pushing it hard from the first mile. Chilton's insightful when he says, "This is what it



must have been like to drive a new Dino in 1970, next to heavy dinosaurs like the Daytona.” You can lean on the front end without fear regardless of road surface or camber. It’s thrilling and relaxing all at once.

But not all is perfect. The rear wing makes odd airplane noises in crosswinds and it completely blocks my rear vision. Furthermore, Porsche’s traditionally stingy approach to standard equipment is reflected in the fact that this \$104,815 car doesn’t have auto temperature controls. Also, what kind of world do we live in when a mid-engined Ferrari has a more spacious and usable cockpit than a mid-engined Porsche?

I finish the day with the AMG GT S. Okulski’s scathing on the subject of the long-hood Mercedes: “Everything feels exaggerated and manufactured, more like a program than an analog device.” I prefer to think of it as simply low-effort and pleasant. Very fast, easy to drive, brilliant interior. The whole thing feels like it’s milled from a single billet of high-quality aluminum. What it does not do is inspire any particular desire, other than the desire to merely own one. As a former 560SL owner, I quite like it, but it’s not summoning much enthusiasm among my peers. Not to worry. Tomorrow we’ll evaluate these cars all over again, on the long front straight of NCM.



THE TRACK

I'M NOT A NERVOUS PASSENGER, but when SRT's Chris Winkler shifts into fifth at the same place I normally hit the brakes and turns what I consider a 110-mph right-hander into a 135-mph no-brake right-hander by hucking the steering wheel of the Viper ACR as hard as he can and letting the massive rear wing sort out the stability, I have to work very hard not to vomit. Nominally speaking, the man is here to put on the front splitter and air the tires, but it seemed churlish to not let him show off his new toy for us.

"The process can be more violent than most people are used to," Winkler notes without the slightest bit of irony to his tone, "but with the wide Kumho virtual race slicks and all the aero grip available, it's typically the fastest way around." When it's my turn to drive the ACR, I simply cannot do what Winkler does. My brain won't let me. It cannot believe in the wing.

Yet I'm still faster in the Viper than I am in anything else, and so is the boss man, who turns a 1:58.14 in his sessions without too much hassle. The Bentley brings up the rear of our group, at 2:10.66. Everything else is somewhere in between. Although all eight of us are driving each car on track, only Webster is running a timer. This is to prevent some of us from crashing and to

Our man from England, Chris Chilton, applies some "oppo" to the AMG. We call that opposite lock. Or, simply, fun.



NCM MOTORSPORTS PARK

Although NCM is across I-65 from the National Corvette Museum, it's not a Playskool track for parading Vette owners. Artfully laid out on a compact 210-acre parcel of Kentucky red clay, NCM is fast, long, challenging, and endlessly entertaining, a refreshing break from the typical overly cautious—read: boring—new track. Le Mans racers, recognizing its similarity to the Circuit de la Sarthe, even test here. We ran a 2.9-mile configuration with 19 turns for our evaluation.

TRACK FACTS

LOCATION: National Corvette Museum, Bowling Green, Kentucky
YEAR BUILT: 2014 | **SURFACE:** Asphalt | **TOTAL LENGTH:** 3.15 miles



This series of tight corners in the infield illustrates a car's handling and speed largely independent of aerodynamic grip. The Corvette's sticky Michelins and flexible engine ruled the day, besting the Viper by a quarter-second.

TIME THROUGH INFIELD
QUICKEST: Corvette, 33.53 sec
SLOWEST: Bentley, 37.58 sec

This decreasing-radius, tight hairpin is perfect to evaluate a car's trail braking. After hard deceleration during approach, the driver must precisely ease off the pedal to get front-end bite. All the cars were slow here—the quickest went 38 mph, the slowest, 35.

Here's where the ungainly aerodynamic appendages on the Vette and Viper pay off: Both cars arc through Turn 5 at about 100 mph—a staggering 10 mph faster than the others—needing just a quick brake stab and downshift before turning. The rest have to scrub more speed before sliding and tiptoeing through.

CORNERING GRIP, TURN 5
HIGHEST: Viper, 1.33 g
LOWEST: Bentley, 1.01 g

This 130-mph dip and kink at Turn 15 gave us more than a few gray hairs. Maintaining speed and bravery here was key to achieving a fast lap. We aimed for the big oak tree beyond Turn 16 to guide us through.

Turn 16 is tricky. The farther you go to the outside of the corner, the more the track tilts away. Surprisingly, the porky Bentley didn't embarrass itself. Much.

SPEED IN TURN 16
FASTEST: Corvette, 94.0 mph
SLOWEST: Bentley, 82.5 mph

1.43 G

The ZO6 set the test's highest lateral acceleration in the banked Turn 7.

158.72 MPH

Ferrari's peak speed, some 10 mph higher than the next fastest car. Credit massive power and low drag, which admittedly hurt cornering speed compared with the cars wearing boisterous aero devices (we're talking about you, Viper and Corvette).

Pro 'shoes report that this chicane is exactly like the one on the Mulsanne straight. It's surprisingly entertaining—we buzzed in at about 70 mph. Avoid the temptation to ride the exit curb.

NCM LAP TIMES

- 1 Dodge Viper ACR**
1:58.14
- 2 Chevrolet Corvette ZO6**
1:58.25
- 3 Ferrari 488 GTB**
1:59.04
- 4 Ford Mustang Shelby GT350R**
2:02.27
- 5 Mercedes-AMG GT S**
2:02.74
- 6 Porsche Cayman GT4**
2:03.78
- 7 Cadillac ATS-V Coupe**
2:08.15
- 8 Bentley Continental GT3-R**
2:10.66

4405

TOTAL HORSEPOWER

FOR THIS YEAR'S 8 CONTESTANTS, WITH A PER-CAR AVERAGE OF **551 HP**. LAST YEAR'S AVERAGE WAS **463 HP**.

\$167,426

AVERAGE AS-TESTED PRICE FOR THE 2016 PCOTY FIELD, WITH A TOTAL STICKER COST OF OVER **\$1.34 MILLION**.

4700

TOTAL MILES DRIVEN

- NEARLY **3900 MILES** ON THE ROADS OF TENNESSEE AND KENTUCKY.
- OVER **825 MILES** ON THE CIRCUIT AT NCM MOTORSPORTS PARK.

prevent others of us (ahem) from voting the impersonal verdict of the stopwatch.

We have two days at NCM to drive the cars and choose our favorites, but before twilight calls time on our first evening, the pit lane has already acquired a distinct reality-television atmosphere as each of us tries to form alliances and kick some cars off the island, so to speak.

There's Team Ferrari, headed by Mr. Webster. "Best autobox I've ever had on the track. . . . Love how the Ferrari responds to trail braking. . . . The aero cars do too much for the driver. The Ferrari is looser, easier to slide, and makes you think about where you're putting the weight of the car. It is," he concludes, "the car I'd take to the grave." Around NCM, the 488 can be effortlessly coaxed into long one-handed drifts, but I wish it had more front-end steady-state grip.

Cayman GT4 dances through right-left combinations with poise.

Team Mustang is led by Colin Comer: "It has soul. You can't help but love it. Like the

'12-'13 Boss 302 but just that much better. Is there a car here that punches more above its weight than the GT350R?" Part of it is due to suspension setup. The high negative camber really pays off on track. I expected that. What I did not expect was the way the light flywheel and carbon-fiber wheels conspire to make the car feel inertia-free in a straight line. It seems to violate the laws of physics. Bowman: "This and the Viper are the cars that make you want to be a better driver."

The Cayman has DeMatio and Smith as devoted fans. "This car is everything for me. It instantly tripled my confidence level at NCM," DeMatio gushes. "Made me feel like every other lap I did today was a mere warm-up." Meanwhile, young Smith is trying to convince me that the Cayman can be tossed into the first big right-hander almost flat. But with my considerable bulk in the car, the tail steps out, and the Porsche Stability Management saves the bacon that the midmounted inertia had been cooking up for us. "Try it yourself," Smith growls. But I'm not interested.





I'm busy leading Team Viper. It's the fastest car here, the most demanding to drive and yet the most rewarding when it's pushed close to its limits. The learning curve is steep, true, but you'd feel really good about yourself when you reached the top. Chilton agrees: "Looks like a race car and feels like one. It's also the only car that felt like it could keep on lapping hour after hour."

That last is a pointed aside about the GT350R and Z06, which are showing some scary temperatures on their displays. That said, the Ford and Chevy are far more accessible to novices. "I can't believe how the Corvette harnesses so much horsepower with such ease," says Webster. "That's the real achievement here." Likewise with the Ford. If you owned the GT350R and the Viper, you'd be faster in the Mustang for a long time. Maybe forever, if the idea of using the steering wheel as a brake at triple-digit speeds doesn't appeal.

None of us expect the Bentley to be a hero on the track, and predictably, even the massive eight-piston front brakes can't arrest the two-and-a-half-ton weight for long. It's slow in this company, but don't kid yourself: A Miata would never see which way the GT3-R went, on track or off. The ATS-V is not only faster than the Bentley, with a 2:08.15 time, but it's far more comfort-

able in its skin out there. "Great brakes, chuckable," quoth Pinto.

Nothing mellow about this yellow: Z06 brings big power, big grip, big aero to track duty.

It's the AMG that is truly an enigma. Faster than the Cayman by dint of sheer massive motivation from the twin turbochargers mounted inside the vee of the cylinders, and capable of threatening the Mustang despite having nothing like that car's chassis balance, it nevertheless has no ardent fans. Remembering how hard I campaigned for the SLS Black Series to win the inaugural, 2014 PCOTY, I can't help but think that the same gonzo wings-and-wheels formula, applied here, might make the GT S lovable enough to triumph in a future contest.

At the end of the second day, after impassioned dinner-table speeches and plenty of hushed but heated arguments around pit lane, it's time for the vote. We can each distribute 25 points across as many cars as we like, but we can't give more than 10 points to any particular one, and we can give only one vehicle 10 points. Everyone's quiet as road test editor Robin Warner does his tally. And then there were four:

The **Corvette Z06** arrived at PCOTY as heir apparent to the Z51 Stingray's decisive win in 2014. Yet about half of us like the

What owners say about V1...



★★★★★ Bill P., Phoenix, AZ

Where's the radar? An arrow lights up, pointing either Ahead, to the side, or Behind. And, amazingly, it's never wrong.



★★★★★ Arnie R., Atlanta, GA

So easy to operate, a box with one knob. No need to poke around at full-arm's reach for little buttons the size of rice grains.



★★★★★ Glenna R., Dallas, TX

Love the arrows! Where's the radar? They tell me every time. How come no other detector thought of that?



★★★★★ Chas S., Charlotte, NC

Situation Awareness you can trust. With the Radar Locator arrowing toward threats, and the Bogey Counter telling how many threats you face, V1 makes defense easy.



★★★★★ Cal L., Trenton, NJ

I've owned my V1 since 2001, and I've had it upgraded twice. I trust the arrows to point out every radar trap. When I know *where*, I know how to defend.



★★★★★ Ed H., Las Vegas, NV

How can anyone not be smitten by the Arrows? Radar ahead needs a different defense than radar behind. When I know where, I know what to do. And I can tell when I'm past the threat, too. All other detectors just *beep* and keep you guessing.



★★★★★ Rob R., Sacramento, CA

This is the slam dunk best radar detector. No databases to keep updating, or other "features" I'll never use. Instead V1 tells me the important stuff—the Bogey Counter tells you how many threats within range and the red arrows tell where they are.

Trust...V1 earns it one ambush at a time.



★★★★★ Harold B., Houston, TX

On my way home this afternoon I was following another detector user. I could see red blinking in his windshield as we went past the first radar. Thinking the danger was behind, Mr. Ordinary Detector User hit the gas.

Uh-Oh. V1's **Radar Locator** was showing two arrows, one pointing toward the trap now behind, and a second arrow ahead. The "2" on the **Bogey Counter** confirmed we were being double teamed.

Sure enough, Mr. O. D. User cruised into the second trap up the hill at 15 over and got himself a blue-light special.

V1 points to every trap. I trust it completely.

Bogey Counter

Tells how many:
Radar hiding within a false alarm? Two radars working the same road? Reads instantly.

Control Knob

Turns On/Off, adjust volume, press to mute.

Radar Strength

More LEDs glow as radar strengthens.

Radar Locator

Tracks one or more radars at the same time; points to each.



Ahead

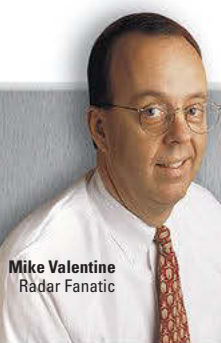


Beside



Behind

Rear Antenna
Scans behind for radar.



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standard Corvette more than the special-reserve version. Blame the supercharger, which endows this car with massive pace yet removes some of the involvement from back-road driving.

The **Ferrari 488 GTB** starts at \$245,400, and our tester—featuring a \$12,485 paint job, \$10,798 racing seats, and expensive carbon-fiber trim inside and out—rang in at \$347,942. Listen: it's worth every penny. It beats an Enzo around Ferrari's test track, and on the back roads of rural Tennessee, it's capable of warping space and time. It's better at being a sports car than the Corvette is, and it's almost better at being a luxury car than the Bentley is, particularly if your idea of "luxury" involves catching the eye of potential bedmates. It's almost too good; one suspects that if it leaked some oil, it might have won PCOTY, because those of us who like to wrench on cars could relate to what is otherwise a perfected machine.

Any time you're feeling depressed about the state of the world today, just remember that the **Viper ACR** exists, that there is actually a functioning corporation out there willing to give the green light to the consumer sale of what is essentially an FIA GT racer. Don't think of it as a traditional performance car. Think of it as a four-wheeled Suzuki GSX-R1000 with slightly more wet-weather capability and nontrivially lower lap times. It's probably the most thoroughly track-developed car ever sold to the public, and somehow along the way it became something that rank novices could drive and enjoy safely at exuberant speeds.



Two ways to get around a track:
Viper ACR's downforce and
Ferrari 488 GTB's ridiculously
powerful turbo engine.

THE WINNER

AROUND NCM MOTORSPORTS PARK, the **Ford Shelby GT350R** feels very nearly as special as the Viper ACR. It has the same single-minded focus on high-speed balance and usable performance, and if it sometimes feels a bit like a taxicab compared with the Viper, it makes up for that with a simply magical V-8 that brings the caviar thrills of 8250-rpm performance to a beer-and-burgers demographic. If you could summon some sort of Lovecraftian dark magic to combine the best parts of the other seven cars in this test—the Bentley's on-road poise, the Cadillac's vivacious chassis, the Merc's bluff-nosed retro charm, the Cayman's accessible limits, the Ferrari's auditory drama, the Corvette's wide-hipped machismo, and the Viper's sense of purpose—then what would appear in the swirling mists would be, not Cthulhu the Great Old One, but Shelby the Baddest Mustang. Our winner by a runaway vote, the Ford Mustang Shelby GT350R is, quite deservedly, the Road & Track 2016 Performance Car of the Year. ■

PERFORMANCE REPORT, P. 72 ►



Ode to a flat-plane V-8:
Ford Mustang Shelby
GT350R, we salute
The Sound of thee.



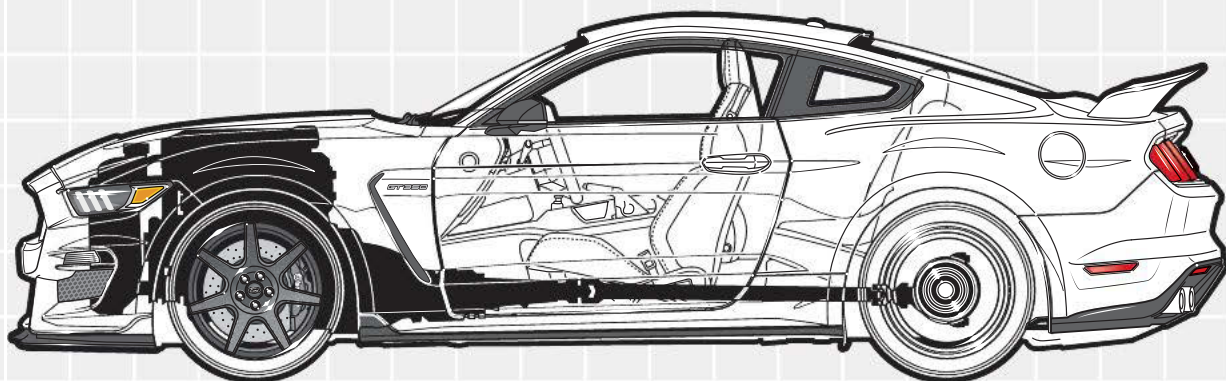




OFFICIAL PERFORMANCE TEST REPORT

2016 FORD MUSTANG SHELBY GT350R

SCALE: 10 IN. DIVISIONS
ILLUSTRATION BY TIM BARKER
© ROAD & TRACK/HEARST MAGAZINES



SPECIFICATIONS

PRICE

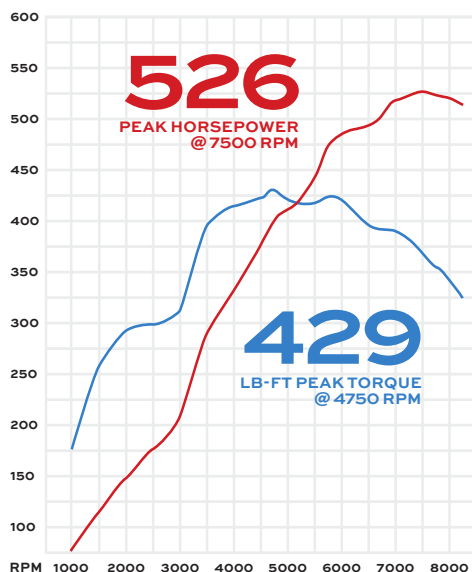
BASE	\$63,495
AS TESTED	\$67,465

ENGINE

LAYOUT	front, longitudinal
CONFIGURATION	V-8
INDUCTION	naturally aspirated
MATERIAL	aluminum block and heads
VALVETRAIN	DOHC, 32 valves
DISPLACEMENT	5163 cc
BORE x STROKE	94.0 x 93.0 mm
COMPRESSION RATIO	12.0:1
REDLINE	8250 rpm
FUEL DELIVERY	port injection

TRANSMISSION

DRIVEN WHEELS		rear
TYPE		6-speed manual
FINAL-DRIVE RATIO		3.73:1, limited-slip differential
GEAR	RATIO	MAX SPEED (RPM)
1	3.25:1	53 mph (8250)
2	2.23:1	78 mph (8250)
3	1.61:1	108 mph (8250)
4	1.24:1	140 mph (8250)
5	1.00:1	174 mph (8250)
6	0.63:1	174 mph (5200)



STEERING

ASSIST	electric
RATIO	16.5:1
TURNS, LOCK-TO-LOCK	2.6
TURNING CIRCLE	40.4 ft

SUSPENSION

FRONT/REAR	strut-type/multilink
------------------	----------------------

BRAKES & TIRES

FRONT	15.5-in vented rotors, 6-piston fixed calipers
REAR	15.0-in vented rotors, 4-piston fixed calipers
TIRES	Michelin Pilot Sport Cup 2
SIZE	F 305/30R-19, R 315/30R-19

BODY & CHASSIS

CONSTRUCTION	unit
MATERIALS	steel, aluminum, and carbon fiber
LENGTH	189.7 in
WIDTH	75.9 in
HEIGHT	53.6 in
WHEELBASE	107.1 in
TRACK F/R	63.3/63.7 in
DOORS/SEATS	2/2
EPA CLASS	2-seater
CARGO CAPACITY	13.5 ft ³
DRAW COEFFICIENT	—
FRONTAL AREA	24.8 ft ²

WEIGHT

CURB WEIGHT	3708 lb
DISTRIBUTION FRONT/REAR	54/46%
WEIGHT-TO-POWER	7.0 lb/hp

FUEL

EPA CITY/HWY	14/21 mpg
CAPACITY	16.0 gallons
RANGE	336 miles
RECOMMENDED FUEL GRADE	premium

TEST NOTES

- Well-balanced chassis that's easy to modulate while cornering at the limit. It's like driving a Mazda 6 with Hoosier road-race-tire grip.
- It takes a full day of driving to realize you're instinctively shifting 2000 rpm short of redline.
- Best launch came in Drag mode, using launch control at the 5500-rpm setting and releasing the clutch a tad slower than a dump.

TEST RESULTS

4.0

0-60 MPH, SECONDS

12.3

0-1/4-MILE, SECONDS @ 117.9 MPH

174

TOP SPEED,
MPH (EST)

1.10

g

ROADHOLDING,
300-FT SKIDPAD

1 FOOT (ROLLOUT)	0.2 sec
60 FEET	2.1 sec
ROLLING START, 5-60 MPH	4.8 sec
1/4-MILE	12.3 sec @ 117.9 mph

0-10 MPH	0.5 sec
0-20	1.1
0-30	1.7
0-40	2.4
0-50	3.1
0-60	4.0
0-70	4.9
0-80	6.3
0-90	7.5
0-100	8.9
0-110	10.8
0-120	12.7
0-130	14.9
0-140	18.5
0-150	22.1

TOP SPEED
(DRAG-LIMITED, EST)

174 mph

BRAKING

60-0 MPH	106 ft
80-0 MPH	189 ft
FADE	none

HANDLING

ROADHOLDING	1.10 g
BALANCE	mild understeer



Ready to hang ten.

With adaptable seating for eight,
the all-new Pilot Touring is ready for anything.





“You bet

I have

WeatherTech®”

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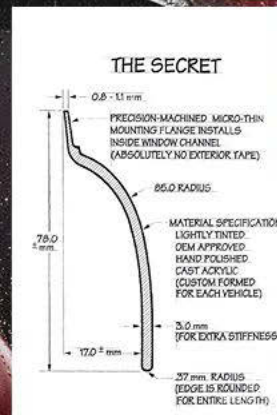
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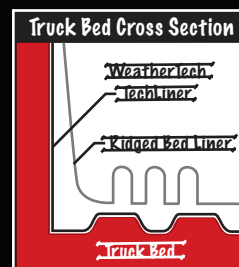
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MAN vs.



**AUTOMAKERS HAVE DEVELOPED CARS
THAT CAN DRIVE THEMSELVES.
BUT CAN THEY RACE A PRO ON A TRACK?**

BY A.J. BAIME | PHOTOGRAPHY BY ROBERT KERIAN



MACHINE



*It would be man versus robot, a slug­ging match of speed.
In both cases, I'd be in the pas­sen­ger seat on the track, a referee of sorts.
Only I'd be in control of absolutely nothing.*

A

THOUGHT POPS INTO MY HEAD as I sit in the passenger seat of “Robby”—Audi’s fully self-driving RS7. We’re tearing down a straightaway at Sonoma Raceway, bounding at 108 mph for a hairpin turn, one of Audi’s most powerful

production engines zooming to redline—and there’s no human steering the wheel. Brain flash:

If I get killed here, will my life insurance cough up money? Insurance policies have negligence clauses. What could be more negligent than doing hot laps around a highly technical race-track in a car driving itself?

I’d come to Sonoma for a competition unlike any other. An autonomous vehicle—Robby, an RS7 wired up with computers by the wizards of Ingolstadt—would set a lap time on the loopy, 12-turn, 2.52-mile circuit. A professional racing driver would then set his own lap time in a nearly identical car—same weight, same engine, same specs. To make it interesting, we flew in IndyCar hotshoe J. R. Hildebrand—road-course master, second-place finisher at the Indy 500.

It would be man versus robot, a slug­ging match of speed. In both cases, I’d be in the passenger seat on the track, a referee of sorts. Only I’d be in control of absolutely nothing.

The day begins under the threat of rain clouds, always a nerve-tangler when you’re pulling into the paddock of a racing circuit. J.R. arrives at Sonoma soon after I do. A handsome native Californian in jeans and a flannel shirt, he knows everyone here, shaking hands with the easygoing manner of a man accustomed to the spotlight. Turns out, he grew up near Sonoma and studied his craft on this pavement for years. Which means he’ll be fast right out of the gate, one would assume.

It was brave of him to show up, and I thank him profusely. What if the autonomous Audi beats his lap time on his home track? J.R. has a lot to lose. He may know this circuit, “but I’ve never been here in this car,” he says.

We grab seats in a hospitality area, where we fall under the spell of Klaus Verwey. As Audi’s head of automated functions, Verwey is the chief brain behind the self-driving car I’d be racing in today. Dressed in athletic gear (he’s an ultra-long-distance runner), he speaks in soft, thick-accented tones which have an immediate calming effect.

“We do piloted driving because we’re convinced it will bring safety on the road,” he says of Audi’s autonomous driving program. “The task for us as engineers and as a company is to create a kind of technical revolution.”

So, why have an autonomous car set lap times at Sonoma? Will this generate useful data, or is it just for sport and publicity?

“You have to enable the car to handle critical situations,” Verwey says, “even at the physical limit.” Critical situations? The physical limit?

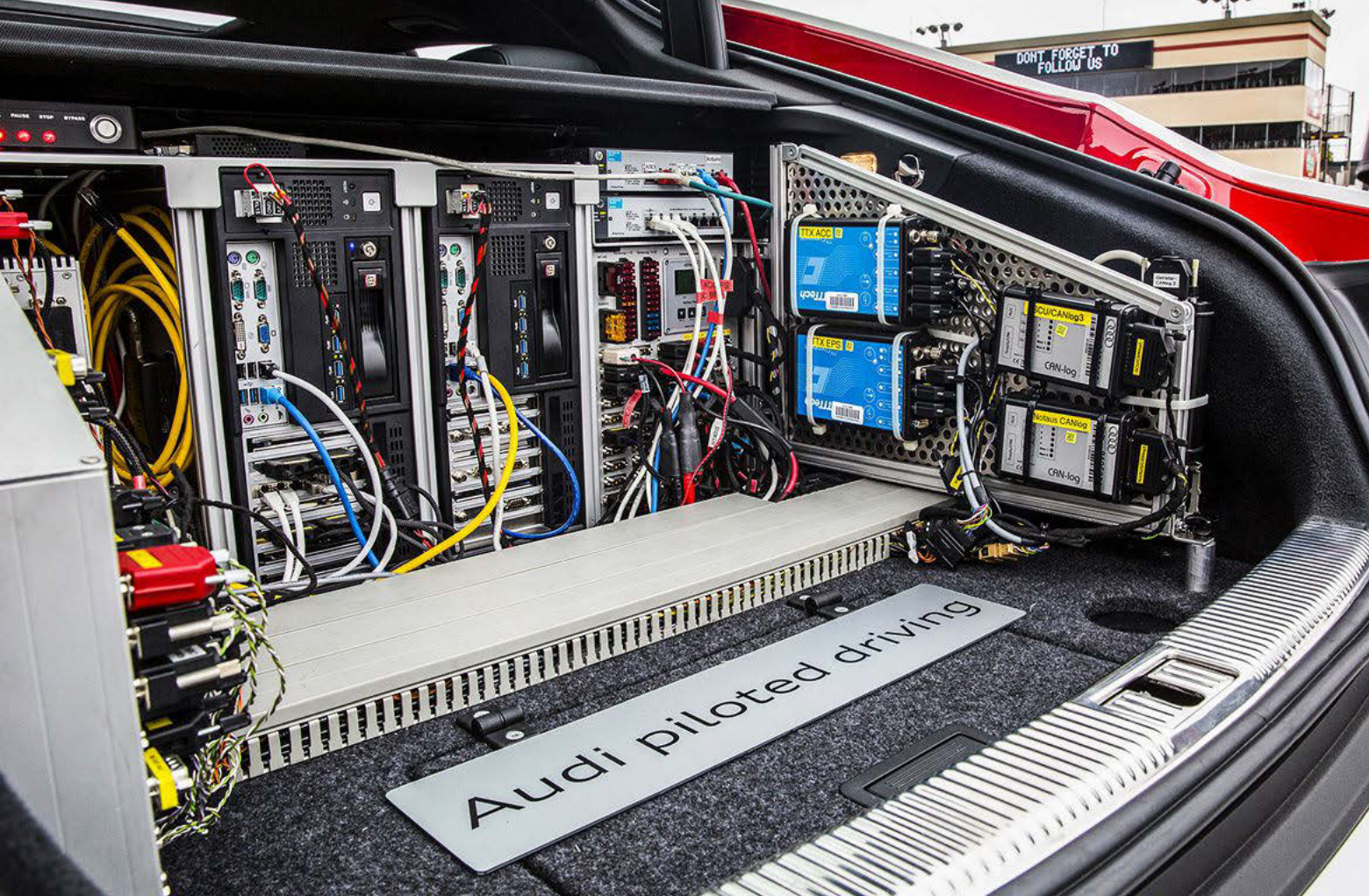
Time to go meet Robby.

THE IDEA BEHIND SELF-DRIVING CARS IS SIMPLE:

Computers are safer drivers than humans. Studies show that human error is the cause behind some 90 percent of traffic accidents. Using radar, GPS, lasers, and sensors, a computer-driven car can see 360 degrees around itself, in any weather, in the thick of night, all the time. It knows where turns and hazards are before they arrive. It can drive with more efficiency than a human can, and it will never fail a sobriety test.

Point: It’s only a matter of time before your pizza is delivered by a Fiesta driven by an ATM. According to a recent Pew Research Center study, 48 percent of Americans said they are ready to climb into an autonomous car. (By comparison, only 20 percent said they’d eat meat grown in a lab.)





Travel by autonomous car means packing light (above). Hildebrand (opposite) sizes up his competition.

That's why virtually every major car manufacturer has opened offices in Silicon Valley and is working on an autonomous vehicle. The company making the most headway isn't a car manufacturer, at least not yet: Google, with its self-driving Lexus and its diminutive pod car, affectionately referred to as "the nerdmobile" by *USA Today*. Google has already tested its self-driving vehicles for more than a million miles on public roads. (I've motored around Mountain View, California, in one, and it felt perfectly ready for consumer use—far safer than many drivers I know.)

BMW has demonstrated self-driving cars that can drift through a slalom course, and Japanese prime minister Shinzo Abe has motored through the clogged arteries of Tokyo in self-driving automobiles built by Nissan, Toyota, and Honda. Ford executive chairman Bill Ford has called his company's autonomous Fusion hybrid research vehicle "a vital step toward our vision for the future of mobility." Meanwhile, not wanting to be outdone by the action in Silicon Valley, Michigan recently unveiled its 32-acre Mcity, a research facility where Ford, GM, Honda, Nissan, and Toyota join scientists and engineers from the University of Michigan to develop tomorrow's robot cars.

Questions abound. What about hackers? (Security is a big part of the R&D.) What about car insurance? (Your premiums are going to plummet!) The question everyone asks: When will all this happen? Take Audi's case, for example. Within three years, Audi will market Traffic Jam Pilot, which will enable the car to drive itself at speeds up to 37 mph. Other manufacturers have similar systems nearly ready for consumers.

Fully autonomous driving that involves you legally asleep at the wheel? Experts say that's still a generation away.

Of course, there's no better place to test these new technologies than the ultimate laboratory—the racetrack. Which leads us back to our friend Robby. From the outside, only the decals distinguish Robby as a self-driving car. He looks like a regular RS7, with that glorious, signature sloping back. Under the hood: a 4.0-liter direct-injected twin-turbo V-8, producing 560 hp and 516 lb-ft of torque. Under the hatch lies the computer equipment. (You read that right: The driver is in the trunk.) The software is proprietary, but the components are from other manufacturers.

"Robby basically sends a data transmission to the GPS, so he knows very precisely his current position," explains Verwey, staring down into the jumble of wires and widgets. "He has the inertial-sensor unit, so he knows very precisely the condition of the car, the stability, in the moment. And then he has one central brain where he can decide what is the next action to take, concerning pulling down the throttle, pressing the brake more or less, and doing the steering. All in real time."

To get to know the raceway, Robby drove two learning laps with a human driver at the helm, Verwey explains. One on the left border of the track, one on the right border. "He records these lines and extracts the space between, so he knows the space where he is allowed to drive."

Robby then uses a simulation process to find the ideal racing line, taking into account his weight, power, braking power, gearbox, etc. From that process, he calculates 95 percent of his line. Audi engineers then manipulate the remaining five percent themselves.

Worth noting: While roadgoing autonomous cars have the ability to sense and avoid unexpected obstructions, Robby does not have that capability. If a deer runs onto the track in front of the car at Sonoma? Venison stew.

Climbing in on the passenger side with helmet on, I'm introduced to Audi engineer Markus Hoffmann, who will serve as today's "redundancy system." Hoffmann will ride in the driver's seat, just in case. "I've got the kill switch in my hand," Hoffmann



says. *Great, I'm thinking. A lot of good that'll do us if something happens midway through a corner at speed.* A computer may be a safer driver than a human, but if it glitches at 100 mph, does it have the capacity to experience terror? Meanwhile, I'm holding in my lap another computer—a data-collection unit, so we can record our position and speed on every part of this racetrack.

Hoffmann drives the car under his own guidance slowly onto Sonoma's pit straight, then stops 100 yards before the start/finish line. To engage the system, he hits a little red toggle switch. Robby cycles himself: He turns off, then turns himself back on, switching into race mode. "And now," Hoffmann says, "when I hit this button [the same button that is the kill switch], we are ready to go."

ROBBY LAUNCHES FOR TURN 1, reaching 60 mph in about four seconds, not bad for a 4500-pounder. But he doesn't stop there. We're flat out through the left-hand Turn 1, staying on it as we tear around a right-hander and back down a hill. It's clear within seconds: Robby means business. Look out, J.R.

Glancing over, I see Hoffmann has his hands completely off the steering wheel, which is turning the car, like there's a ghost in the machine. Braking is aggressive. So is the throttle. Robby carries a high entry speed into Turn 3, a left-hander which is really a setup for the next bend, an off-camber right. He hits the apex perfectly and charges hard.

Is he faster than I thought he'd be? Absolutely. More in control? Yes again.

We head for Turn 6, a full 180-degree juggernaut. As he moves through the corner, the Pirellis screech. We're on the edge of our

grip. Then it's as fast as possible into a short straight (here, I would later learn from our data, Robby is hitting his top speed: 114 mph). Turn 7 is a killer. Hard on the brakes! Our maximum deceleration equals 1.21 g's, enough force to make me feel like the seatbelt might slice me in two. Then we head for the long bends on the back part of the track, fast sweeping turns that bounce me around like a corn kernel in a popper. Robby handles this with confidence, and his line approximates what mine would be,

judging from where I sit. Finally, we hit the second hairpin, Turn 11. Robby moves remarkably close to the wall while making his entry at 108 mph. Then he brakes hard, putting the weight of the vehicle on his front tires at the moment of entry—textbook.

By the time we reach the finish line, I'm pretty much cross-eyed. We step out of the car and soon enough, we can examine some data—impressive to say the least. Lap time: 2:02.50. Top whack: 114 mph. Minimum speed: 31 mph. My heart rate: off the friggin' charts.

It's clear within seconds: Robby means business. Look out, J.R.

"JUST WATCHING THE CAR," says J.R., standing on pit road, "I was surprised by how aggressive it was. I don't want to make any assumptions, because the car is obviously hauling ass. But it strikes me that in a couple places, it's following a more bird's-eye

view, a more geometrical line around the track."

J.R. seems not a lick nervous. That might be because he's in an environment as familiar as his living room. The 27-year-old didn't start racing until age 14. He won his very first race, in a go-kart, right here at Sonoma, which led to a scholarship to do his studies here with real teachers, who helped him master—among other things—the ability to separate fear from decision making. From there, he was off to the races: more go-kart competition, some minor-league open-wheel stuff, and then, bingo, J.R. was in the ultimate hot seat, driving an official test session in Formula 1 for the Force India team at Jerez, Spain. The following year, he joined IndyCar full time, famously placing second as a rookie at Indianapolis in 2011.

His performance at that race is legendary and heartbreaking. The rookie stole the front position with a pass on Dario Franchitti with three laps left, taking a hefty lead into the last lap only to hit the wall in the final corner of the 500-mile race. Millions were watching. He rolled over the finish second in a car that looked like it had gotten its teeth knocked out. The commentator: "That is unbelievable!" And it was.

J.R.'s car today will be no IndyCar rocket, but rather a stock Audi (the RS7 starts at \$107,450) with minor modifications so the weight of this car is almost the same as Robby's.

The autonomous car's ability to immediately turn a fast lap is fascinating, J.R. and I agree. (So is Robby's consistency. In three laps over the course of the day, Robby's lap times were within a tenth of a second of each other.) Racing is an art form, similar in many ways to playing a musical instrument. It requires the capacity to absorb extraordinary amounts of

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information, to use that information to make split-second decisions, then to communicate those decisions to the instrument using fluid body movements. It requires the ability to speak the car's language (every car is different), and to quickly learn one's environment.

"Realistically," J.R. says, "the learning process for me to get dialed in on a track is probably a little slower than it is for Robby, to get to a reasonable level of speed. But then, I can con-

Uphill after Turn 1, J.R. hits 87 mph, while Robby's top speed is 75 mph. J.R.'s approach in Turn 3 is 9 mph faster. By the time we're through the first two corners, J.R. has already pulled a second ahead of Robby. Approaching Turn 4, he hits the brakes (this was his point of max deceleration—1.22 g's).

In J.R.'s hands, I'm as comfortable as I would be on a swing-set on a playground. He is a human! Not a computer. Although on the track, he feels almost superhuman. No matter how much engineers preach about the safety of autonomous cars, it sure feels nice to be driven by a person.

J.R. makes his approach to Turn 7, the first hair-pin. According to the data, this was the one corner where Robby proved quicker—just barely. But from here on out, J.R. hammers it home, throwing the car through the left and right esses with aplomb.

A computer may be a safer driver than a human, but if it glitches at 100 mph, does it have the capacity to experience terror?

On the fast sweepers—Turns 8 through 10—he gains more time. His top speed on this part of the track is 111 mph, compared with Robby's 103.

When we're back in pit lane, the numbers tell the story. J.R.'s lap time: 1:53.24, a difference of 9.26 seconds over Robby's. Top speed: 118 mph (Robby's was 114 mph). Slowest speed: 34 mph (Robby's was 31). I think we can go ahead and call that a KO.

Outside the car, J.R. remains relaxed, like it's just another day on the job. "I wasn't expecting the car to be that quick," he says. "If you took a few hundred pounds out of this thing, if you took out the back seats and some of the sound deadening and put slicks on it, this would feel like a race car. The braking performance is insane for a car this big."

J.R. is happy. So are the Audi engineers. As we peel off our helmets, high fives abound. Says Verwey: "It's good to see that there is still a difference between what the technology can do and a human with a lot of experience can do."

He speaks with a glint in his gimlet eyes. He is a competitor, and I can sense what he's really thinking: *We'll get 'em next time.*

WITH DAYLIGHT LEFT, I decide to set my own lap, to see how I compare with J.R. and Robby. Having never driven this car, having never driven this track, I climb into the cockpit. The odds are stacked against me. Audi engineers stand there, watching me fiddle nervously with my mirrors. I can tell what they're thinking: *Hey Mr. Writer Guy, don't bend the metal.*

I cruise through a reconnaissance lap, which doesn't help me much on a track as complex as this one. I set the car 100 yards from the start/finish. Then . . . three . . . two . . . one . . . go time!

My lap: 2:10.28, almost eight seconds slower than Robby's. In racing terms, you could grow a beard in that time. My pride is wounded. But at least I'm walking away in one piece. ■

Additional reporting by Robin Warner.



tinue to learn based on the feel of the track and the existing conditions, to do that added optimization piece. I'll know, just from feel, where I can carry more speed, where there's a little more road to use, where the grip on the track is in a slightly different location than what the geometric layout would have you believe."

Sounds good, J.R. Let's see what the lap time says.

The Audi engineers are as eager as I am as J.R. and I climb into the RS7. We head off for a reconnaissance lap. The driver's knowledge of each corner is apparent. "The vertical loading at this track is significant," he says, "because there's a heavy amount of elevation change. That plays a significant role in certain corners, where I will position the car in places where, from a bird's-eye view, it may seem counterintuitive. I will use the compression in the track to try to turn the car."

He adds: "There are so many corners here where you're compromising speed through one corner because you need to set up for the next. It's as complex of a track as there is in the United States, there's no doubt about it."

Back at the pit straight, J.R. positions the car 100 yards from start/finish, so he'll launch his lap in the exact spot Robby did. A thumbs-up from the track steward and we're off—quickly.

HURTLING THROUGH TURN 1, I can immediately tell J.R.'s racing line is not the same as Robby's. Exiting Turn 1 and entering 2, we're a full car-width tighter in the corner. J.R. shows no mercy to the machine. His transitions from brake to acceleration are more aggressive. The overall speed is a mystery to me in real time. But from the data, I would later learn:

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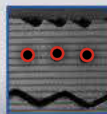


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THE FIRST DRIVE | 2017 AUDI A4

THE SAVIOR

NOT A MOMENT TOO SOON, THE A4 IS BACK IN THE GAME.



IT'S BEEN TWO DECADES SINCE the original A4 almost single-handedly saved Audi of America. The company had spent years defending itself against charges that its cars were prone to sudden acceleration. Funny how a really good car did more than PR campaigns and law firms to reverse Audi's severe sales slide. The A4 quickly and justifiably became a mainstay not only of Audi's lineup but of the luxury-car landscape.

While the A4 became as predictable and familiar as the 3-series and the C-class, in recent years, it hasn't been as good as the original. The last A4, which debuted for the 2009 model year, was luxurious and good-looking but was never really up for cage fights with the 3-series, never mind aggressive newcomers like the Lexus IS and Cadillac ATS.

On first drive, this A4 isn't either, but it does creep closer. To start, it's 70 to 100 pounds lighter than comparable U.S.-spec models of the outgoing car, even though it's slightly longer and wider, thanks mainly to aluminum replacing steel here and there. About 35 pounds were lost in the suspension, brakes, and steering, and another 30 pounds were shaved from the body structure. Even the steering wheel was asked to shed a few ounces; its frame is now made of magnesium.

The A4 is also quicker. The updated gasoline 2.0-liter turbocharged four makes 32 hp more than the previous 2.0-liter, enabling an estimated 0-to-60-mph time of 5.6 seconds for the all-wheel-drive model (front drive is still standard). The latest version of Audi's seven-speed dual-clutch transmission, specially calibrated

for U.S. cars to provide smoother transitions and launches, replaces the eight-speed torque-converter automatic. Fear not: The six-speed manual, which nearly 10 percent of American A4 buyers choose, will return, but not until late 2016.

On Italian autostradas, with the Drive Select program set to Dynamic mode, the S tronic delivered quick, crisp upshifts—or you can take matters into your own hands with the shift paddles. Immediate throttle response, good body control, a silky, supportive ride, and 125-mph composure? Check. But the driving experience is very buttoned-down, subdued, a tad restrained. Or perhaps it's just the well-muffled powertrain. Let's hope the upcoming S4, with a 354-hp, turbo 3.0-liter V-6, will feel and sound more unleashed.

As in the A6, the A4's electric power steering is light in effort and communicates almost nothing but nevertheless works surprisingly well. In the Dolomites foothills north of Venice, the A4 had far more bite than its helm might lead you to believe. I learned to pitch hard into corners and allow the chassis to deliver me painlessly to the exit. This A4 might just be ready to step into the ring with Cadillac, BMW, Lexus, and Mercedes.

Audi already has enough fight on its hands, however. Having hitched much of its brand identity to the Clean Diesel movement, it's not untainted by the unfolding emissions scandal at its parent, Volkswagen. For now, though, Audi hopes to offer the 2017 A4 with a 2.0-liter turbodiesel engine, assuming it can assure the EPA of the model's emissions purity. Is that possible? Wouldn't we all like to know. —JOE DEMATIO

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THE FIRST DRIVE | 2016 BMW 7-SERIES

THE LONG GUN

ALL THE TECH YOU CAN STAND.

THE 7-SERIES WAS ONCE THE HEADWATERS from which BMW's technology flowed, before the "i" cars came along. You can thank the big Seven for introducing iDrive, electronic engine management, active body control, and ABS to BMW.

The most crowd-about tech in the 2016 7-series is its Carbon Core body, which supplements the steel and aluminum structure with carbon-fiber bracing. The roof supports have a carbon tube sandwiched between the steel pressings, saving weight and lowering the center of gravity. Innovative, but it pales in comparison with the carbon-tub structure of the upstart i3.

Inside, the Learjetesque back seats offer a footrest, massage, and an armrest-mounted Touch Command tablet, depending on which package you opt for. Don't forget the 10-inch screens on the back of the front seats. BMW couldn't have been more obvious about which market it designed this car for if LCDs displayed "To China, with love" on start-up.

And if you'd rather drive? The 750i xDrive features a revised 4.4-liter twin-turbocharged V-8 good for 445 hp and 480 lb-ft of torque. Minor tweaks—an integrated intake manifold, higher compression, and revised exhaust manifolds—increase efficiency, not overall power. That's fine. BMW claims a 4.3-second 0-60-mph time, and I don't doubt it. The 740i gets a turbo

3.0-liter inline-six making 320 hp and, as low as 1380 rpm, 330 lb-ft of torque.

The ZF eight-speed automatic largely avoids low-speed lurchiness. To increase efficiency, the gearing is fractionally taller, and in Eco Pro mode, the drivetrain can decouple itself while coasting between 31 and 100 mph. Rear-wheel steering isn't new, but this is the first BMW 7-series that combines it with

all-wheel drive. The anti-roll bars now adjust electromechanically, and the massive Seven can even hustle around in Comfort Plus—a floaty Zeppelin experience, but the grip's there. With Active Comfort Drive, if the car's GPS identifies upcoming curves and aggressive driver inputs, it will shift from Comfort mode to Sport mode automatically. Don't bother with Comfort: Sport is supple yet firm enough that linking a few turns together makes most of the sedan's weight seemingly slough off. That's more confidence-inspiring

than fumbling through the first turn and a half in Comfort before the computers catch on.

The big BMW is surprisingly entertaining to drive, considering it packs more gadgets than an Apple store. There are plenty of megasedans trying to strike a balance between East and West. The new 7-series just happens to be better at it than most.

—ALEX KIERSTEIN

BMW 750i xDrive

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POWERTRAIN 4.4-LITER
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ONE HUNDRED AND FORTY-TWO horsepower. It's a maniacal number—one I would have murdered for when I was whipping around campus in a '95 Civic. But this isn't a 2500-pound commuter. It's a 500-pound weapon. Bass-boat green and ugly as sin, it's a thing I was bound to love. And oh, do I.

My first legal bike was a primordial ancestor to the Ninja 1000, a 1982 GPz 750. It was the genesis of my soft spot for big Kawasakis and wide inline-fours that want to pull out your ribs. This machine fits firmly in that category. Unlike the quad-carbed nightmare I knew as a younger fool, this is a fully modern, fuel-injected creation. The 1043-cc four-cylinder is sublime. Tame and accessible at low rpm, it's perfect for bumbling around town or mingling with slow traffic.

But get a clear shot, crank the throttle, and the engine responds with a gush of power. There's nothing peaky about it, just a brilliant, linear pull that feels like it wants to push well past the wailing 11,000-rpm redline. The pipes are clean and quiet at more sane engine speeds but take on the sound of a chain-gun chorus at upper octaves. It's good.

Gears vanish quickly, snipping away with a two-finger squeeze of the clutch and a wiggle of your big toe, and the speed-

ometer can hardly keep pace with the bike's blitz through time and space. The shock is how little drama's involved. Keep your weight over the tank and the front tire will stay close to the tarmac. Stay tucked, roll into the upper gears, and the Ninja 1000 feels flat and stable past arrest-me speeds.

This is a big sport tourer, not a lightweight apex predator, but the machine holds its own on all but the most technical of roads. It will consume a series of fast corners with palpable glee, building confidence with each sweep of the tachometer. There are nannies onboard: traction control and anti-lock brakes, but neither so intrusive as to be obvious or underfoot.

Gripes? Those up-kicked, triangular pipes make standing to stretch your legs a chore, interfering with your heels. Likewise, the wide saddle could use something a little cushier for foam. You're ready to get off the bike long before the five-gallon fuel tank runs dry.

Otherwise, the big Kawasaki is built to cover miles at a rapid pace. The adjustable windscreen keeps noise down, and the modestly aggressive seating position doesn't throw all your weight to your wrists. After more than 1500 miles over a long weekend, I wasn't ready to give up the keys, even if I'm still looking for my rib bones along the California coast. —ZACH BOWMAN

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THE FIRST DRIVE | 2016 JAGUAR XF S

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PIT LANE, CIRCUITO DE NAVARRA. I'm strapping on my helmet while Jaguar XF senior launch manager Mike Bradley recalls his relief back in July 2014, after his first drive of an XF mule at the carmaker's Gaydon, England, test track. "The thing's bloody fantastic!" he'd said to himself. Just what you'd expect the man charged with imbuing Jaguar's mid-size sedan with the dynamic magic of its F-type sports car to say. But after a few laps of this complicated 2.4-mile track outside Pamplona, Spain, I'm a believer. Turn 2 is gentle, easy in, easy out. Turn 3 is a New Jersey off-ramp, contorting back on itself. Turn 4, if you manage Turn 3, can be attacked nearly at wide-open throttle. Getting this right takes practice, but at the helm of an XF S, I'm a quick learner. Optional all-wheel drive lets me get back on the power early, before the car quickly reverts to its rear-wheel bias, tail swinging and then snapping into line in a tidy BMW 5-series imitation.

This second-gen XF is the latest Jaguar to switch to aluminum construction, with some 75 percent of its unibody made up of bonded and riveted castings, extrusions, and stampings of

the stuff. Jaguar says the XF is both 28 percent stiffer and, in all-wheel-drive form, a claimed 265 pounds lighter than its predecessor. While the body structure is completely new, the supercharged V-6 is carryover. The styling is similar to that of the old car, although the new XF looks lower and sleeker. The cabin is a stunner, with tight panel gaps and just the right gloss of Brit swagger and bold trim options, including red-and-black leather. While the

German sedans match the XF on tactile quality, they don't do this brand of clubby chic. Rear-seat legroom and headroom are both slightly improved.

Although there's no longer a V-8 option (at least for now), there are two V-6 tunes: 340 hp in the base XF 35t and 380 hp in the XF S. The aged six could use more snap and snarl, but there's plenty to love about its torque curve: Regardless of horsepower, the same 332 lb-ft is on hand at 4500 rpm. Toggle the steering-wheel paddles to hold that sweet spot via the ZF eight-speed automatic. The electronic steering is precise and communicative, if perhaps a little too light in effort for some.

In fall 2016, we'll also see the first stateside Jaguars with diesel powertrains. The 2.0-liter turbodiesel XF is both potent—delivering 317 lb-ft as low as 1750 rpm—and quiet. Jaguar promises it will deliver 40 mpg on the highway. It will start at less than \$50,000 and, like its gas counterparts, likely be offered with all-wheel drive.

So, in the XF, Jaguar has a credible mid-size luxury sedan, but you wonder if anyone will notice. Jaguar's been at this for a while now, bringing us model after model with great looks and killer engineering. But although many Americans seem to admire Jaguars, few buy them, and their reluctance is unquestionably due to the brand's decades-long legacy of lousy reliability. Jaguar's answer is a new warranty program with five-year/60,000-mile coverage and free scheduled maintenance, rather than the industry standard four years/50,000 miles. If that doesn't steer a few more luxury-car buyers to Jaguar dealerships, I don't know what will.

—MICHAEL FRANK

Jaguar XF S

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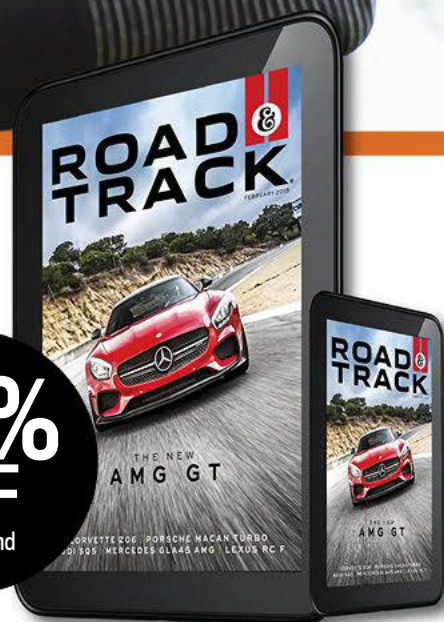
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**CARRYING
THE TORCH**

LOST ART, PAGE 106



LOST ART BY SAM SMITH

GAS WELDING

MAN MASTERS FIRE, MAN MAKES THINGS.

Ordinary people use three types of welding. This is not as boring as it sounds. For one thing, a weld joins two pieces of earth by melting them, and melting earth is awesome. But above that, it helps you build things. Brackets. Roll cages. Entire cars, from scratch. The only limit is the size of your bench.

The two most modern types of home welding are MIG and TIG—for metal inert gas and tungsten inert gas. With each, you pay three or four figures for a computer-controlled box that feeds calibrated electricity and shielding gas into your hands. Or you can go the third route—gas welding—which takes skill, a 6300-degree flame, and little else.

It should go without saying that we're pretty much in love with the third route.

Gas welding joins metal using the heat of a torch burning both oxygen and a secondary fuel. A filler rod is usually blended into the weld for strength. The practice has been around since the late 1800s, but the most common form, developed by the French a century ago, uses an oxyacetylene flame. So-called oxy-fuel welding supplanted the relatively ancient forge welding, which involves heating two pieces of metal, then hammering them together. (The urge to make a “hammered hot things” joke here will be ignored, because we are all adults.)

MIG and TIG dominate the car world because they produce consistent welds with low risk and a modicum of skill. Gas welding generally fell out of favor for opposite reasons. Both oxygen and acetylene are combustible, but more important, there are a lot of places you just don't want an open flame.



Josh Welton is a MIL-SPEC government fabricator from Mount Clemens, Michigan. In the evenings, he's a welding instructor and artist whose work has been praised by men like Ken Block and Icon 4x4 founder Jonathan Ward. He's a great teacher and a man in love with his craft, so we went to his shop to learn to gas weld.

"Acetylene torches changed the world," Welton told me. "There's an old story about the guys who used to cut 12-inch holes in steel ships, for windows. They'd heat it up with hydrogen and chip away at it, weeks to do one hole. Then a guy came in with acetylene, which burns much hotter, and it became something you could do in a day. It's mostly used for cutting now, but you can weld almost anything with the right flux and filler. You can take it anywhere, no power source, a whole setup

for a few hundred dollars. It's incredibly simple."

I glanced at the torpedo-shaped fuel tank at his shop's back wall. "You know," Welton said, "one of my favorite sentences in the textbook is, 'Above 15 psi, acetylene becomes unstable, in danger of decomposition and violent explosion.' Guys have blown themselves up. But if you're smart about it..."

So I tried to not blow myself up. Who knew it took so little in terms of hardware? Even the most evolved gas-weld setup is little more than a torch, a pair of fuel tanks, and a stick of filler. The torch itself is a supply tube with a calibrated nozzle and two knobs to control the gas. Larger torches make greater heat; smaller ones are more wieldy and easier to focus. Welton said the mid-size unit I tried was larger than we needed, but it looked "more badass. With gas, that's half the draw." ►



Clockwise from above: Welding glasses protect eyes, give author movie-star visage; face shield; finished piece.

You crack the acetylene first, sparking it with a flint lighter. The result is a syrupy black smoke, carbonizing, then a feathery orange flame as you trim the gas. Oxygen sharpens the fire, producing bluish inner and outer cones. Flame size equals temperature and focus: Ideally, you want a teardrop-shaped flame-within-a-flame. To weld eighth-inch steel, our inner cone was the size of a pencil eraser.

"You don't need violence," Welton said. "A neutral flame, each gas equal. More acetylene embrittles; more oxygen cuts the metal." So you adjust it by eye, every time.

Watching Welton was hypnotic. You heat two pieces of steel. They glow for a surprisingly long time, then—smack!—pop into liquid, the metal molten and alive. Darkened welding glasses save your retinas and block out everything but the puddle of lava beneath the torch. In the hands of a master, it's a consistent alchemy, quick and seemingly inexorable.

Welton killed the torch and handed it to me. It was oddly heavy for something you hold like a pencil. The metal he had heated dulled, then flashed gray. I relit the torch, balanced the

flame, and focused on the work. And almost immediately, I found myself watching the heat. Adding rod cools the puddle, so it's a game of maintenance. Also elemental. You move the torch in a circular pattern, keeping the weld in the flame's atmosphere to avoid contamination. You stitch steel and your skin warms. The rest of the world disappears.

Ten minutes in, I found myself either ahead of or behind the weld, chasing it or trying to speed it up. Welding consistently was easy, but only if I gave up on appearance or strength. If I fixed one thing, I lost another. It felt like fast driving: Think about a hundred things, but above all, relax.

"The cool thing," Welton said, "is how you can just buy a pair of bottles at Home Depot and fix anything. I think the new generation thinks you have to have a TIG welder. But it's like one of the guys I teach with said—if I'm stranded on an island, give me oxygen, acetylene, and a torch."

Why does that sound so appealing? At Welton's shop, I made a few knickknacks from scrap steel. I took one home and set it on my desk. I've welded before, but this piece was different. No machine. It came from my hands. ■

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TURF WARS

DEALERS, CARMAKERS GO DIGITAL TO RECLAIM SALES.

It was just a crumb of news on the floor of the vast American car market: In July, AutoNation, the publicly traded megadealer that is the country's largest new-car retailer, severed its ties to TrueCar, the third-party shopping service that referred prospective customers to its stores. But the split may have consequences beyond the spat over business practices and data ownership that caused the separation. After years in which dealers willingly ceded the online sales turf to intermediaries, car sellers are now fighting back. Just as hotel chains have been building their own apps to reclaim travelers from aggregators such as Priceline and Expedia, automakers and dealers are creating digital storefronts to wrest online shoppers from the middlemen.

Late last year, AutoNation rolled out AutoNation Express, spending \$300 million on data systems to track the 70,000 vehicles in its national inventory. Carmakers are stepping up, too: In May, Toyota started a pilot program for its Scion brand called Pure Process Plus, aimed at young, tech-savvy consumers. The results have been encouraging enough that the company is launching a similar online-shopping tool for the Toyota brand next year.

It will join FordDirect, the granddaddy of automaker sites that was launched in 2000, and General Motors' two-year-old Shop-Click-Drive, for which GM hired 8000 programmers, according

These shopping sites speed customers far enough through the sales process so that a local dealership merely has to dot the i's and cross the t's.

to the *Wall Street Journal*. What these carmaker shopping sites have in common is speeding customers far enough through the sales process so that a local dealership merely has to dot the i's and cross the t's. Scion Pure Process Plus handles every stage of a new-car transaction, including credit approval. Once buyers finish, they print a certificate to take to the dealer in exchange for the keys. The goal is to have the customer driving away in an hour.

Among the established third-party shopping services, TrueCar has shaken up automotive retail the most. What sprang up in an era of research sites that served up the holy grail of dealer invoice

pricing is today a sophisticated network. Dealers subscribing to TrueCar can deliver no-haggle quotes to shoppers based on typical local transaction prices, information that is provided by these same retailers. Dealers pay a monthly fee to participate and also pay around \$300 each for referrals that lead to a new-car sale. TrueCar itself is something of an iceberg with only its tip showing; most of its business is cloaked by partnerships with huge affinity groups such as AARP, American Express, *Consumer Reports*, and Costco.

There are strong incentives for automakers and dealer chains to bring the online-shopping process in-house. Dealers are eyeing the spiffs they pay for leads, but there is also the issue of transaction data, which TrueCar collects from its subscribing dealers. AutoNation walked away because of TrueCar's demand for information from all its sales, not just the ones that resulted from a TrueCar lead. This practice makes TrueCar stand out among third-party lead providers, and it's how the company provides deal context to car buyers, assuring that they'll "never overpay," as promised in the company's tagline. Implicit in AutoNation's decision is the understanding that there is big value in this data, and not just to TrueCar.

For car manufacturers, there are other concerns, such as the customer experience and the brand positioning their marketing budgets seek to reinforce. Automakers have been less than thrilled with race-to-the-bottom competition among dealers. Honda and Toyota have threatened action against those stores that advertised below-invoice prices, a practice that has been widespread on third-party sites.

Nearly everyone in the business recognizes that the old model is on borrowed time, and that inevitably, larger percentages of new cars will be bought over the Internet. In the coming showdown for digital turf, the automakers have the name recognition and financial resources, and the dealers have the protection of state franchise laws. But the independents have vast member networks, an established track record, online expertise, user trust, and a reach that encompasses all brands and models. The winner? It may be the customer, who stands to spend less time kicking tires and jousting with the finance office.

—JAMES COBB AND NORMAN MAYERSOHN



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DRIVER'S ED

RISKY BUSINESS

ODDS ARE YOUR INSURANCE POLICY DOESN'T APPLY AT THE TRACK. HERE'S WHAT TO DO ABOUT IT.

It all comes down to the fine print: the exclusions and definitions sections of your insurance policy. According to Michael Barry, vice president of media relations for the Insurance Information Institute, the standard industry language for passenger-vehicle policies paints a clear picture of where your coverage stops. Most of the time, it's at the track gates.

It doesn't matter if you loop your 911 and back it into a tire wall or if someone drops a helmet through your Corvette's back glass. If it happens "inside a facility designed for racing," chances are, you're paying for the damage out of pocket unless you purchase additional coverage. Most consumer insurance companies and their underwriters don't offer riders or endorsements for street cars that see occasional track time, competitive or not.

Lockton is one insurer that's risen to fill that void. The company approves about 1200 track days a year, issuing agreed-value policies that begin and end with each event. Go to the company's website (locktonmotorsports.com), answer a few questions about yourself and your car, submit a payment, and you'll get a policy in your in-box within a few minutes.

Ryan Staub, a spokesman for Lockton, spends plenty of time banging off apexes himself. He got the idea to offer agreed-value track-day policies after losing his M3 to a big collision at

Heartland Park Topeka in 2005. His insurance company agreed to cover the damage, but he was lucky.

"It's absolutely better to request a copy of your insurance policy and read it from beginning to end to see if you have that exclusion, as opposed to just asking your agent," Staub said. "Someone who just doesn't understand the hobby might not feel comfortable insuring you for life insurance or other things in addition to actually covering your car."

Lockton doesn't care what your car is, whether it's a bone-stock Miata, a vintage Formula Ford, or a fully prepped 911 GT3 Cup car. Likewise, the company isn't interested in your driving record, because its track-day policies aren't a replacement for your standard coverage.

The cost of a Lockton policy depends on your car and the modifications you itemize. We pulled up policies for both a 2006 MX-5 and a 2014 Fiesta ST for \$162 each. Lockton is endorsed by major car clubs, including the Porsche Club of America and the Ferrari Club of America, as well as the SCCA and track-day promoter Chin Motorsports.

If we sound like shills for Lockton, it's because there are so few insurers willing to sanction track-day events. We asked 10 blue-chip insurance providers if they offer any policies to cover a basic noncompetitive track day. They were all still laughing when they hung up the phone.

—ZACH BOWMAN

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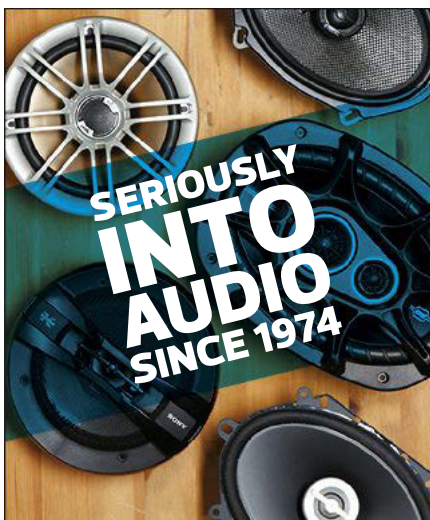
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Ferdinand Piëch, the immensely powerful former chief of Volkswagen's supervisory board, is more than likely the root cause of the VW diesel-emissions scandal. Whether he specifically asked for, tacitly approved, or was even aware of the company's use of software to deliberately fudge EPA emissions testing is immaterial.



I sat next to him at an industry dinner in the Nineties, just after the fourth-generation Golf had debuted at the Frankfurt show. I told him, "I'd like to congratulate you on the new Golf. First of all, it's a nice-looking car, but God, those body fits!"

"Ah, you like those?"

"Yeah. I wish we could get close to that at Chrysler."

"I'll give you the recipe. I called all the body engineers, stamping people, manufacturing, and executives into my conference room. And I said, 'I am tired of all these lousy body fits. You have six weeks to achieve world-class body fits. I have all your names. If we do not have good body fits in six weeks, I will replace all of you. Thank you for your time today.'"

"That's how you did it?"

"Yes. And it worked."

That's the way he ran everything. It's what I call a reign of terror and a culture where performance was driven by fear and intimidation. He just says, "You will sell diesels in the U.S., and you will not fail. Do it, or I'll find somebody who will." The guy was absolutely brutal.

I imagine that at some point, the VW engineering team said to Piëch, "We don't know how to pass the emissions test with the hardware we have." The reply, in that culture, most likely was, "You will pass! I demand it! Or I'll find someone who can do it!"

In these situations, your choice was immediate dismissal or find a way to pass the test and pay the consequences later. Human nature being what it is—if it's lose your job today for sure or lose your job maybe a year from now, we always pick maybe a year from now.

That management style gets short-term results, but it's a culture that's extremely dangerous. Look at dictators. Dictators invariably wind up destroying the very countries they thought their omniscience and omnipotence would make great. It's fast and it's efficient, but at huge risk.

This diesel fiasco is immeasurable in terms of damages—so much worse than Toyota acceleration, Ford Firestone tires, or GM ignition switches. In all those cases, tragically, people died, but it wasn't premeditated. You settle with the victims' families, pay the fine, put in the new parts, and for \$1.5 billion, it can all be contained. But this Volkswagen mess is like the disaster that keeps on giving.

To make the cars legal in the U.S., VW will need to program them with the software that passes the test, in which case, performance is down and fuel consumption is up, and every VW TDI owner is part of a class-action suit against Volkswagen. To retrofit a urea system is basically a nonstarter, as it would require far too much change.

There is no easy fix. But you can probably rely on the German government to do what is necessary to pull Volkswagen out of this crisis.

In terms of marketing cars in the U.S., Volkswagen will need a radically new array of products that are much closer to mainstream American tastes than what it has. The whole Clean Diesel campaign, as the foundation of the VW brand, cannot be resurrected. It's history. ■

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